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THE EQUIPMENT OF THE SCHOOL THEATER

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M. S.

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THE EQUIPMENT OF THE SCHOOL THEATER

PART I

THE SCHOOL DRAMA

DEFINITIONS

School Drama has been defined as "that dramatic activity which had a definite educational aim."[1] It may be considered to include studying, writing, and producing plays. It is mainly with the latter phase, the producing of plays, that this study is to concern itself.

A play is a story designed to be presented by characters in dialogue and action before an audience. The lines to be spoken and the stage directions to be carried out, as written down in a manuscript or printed in a book, are not in the truest sense a play at all. They are the directions from which a play can be made. They become a play by being played, in the same way that a song comes into existence only as the printed words and notes are sung. It is an ancient maxim that "No play is a play until it is acted."

But, according to the modern conception, acting alone does not produce a play; for a play is not merely an intellectual conception of an incident gathered from the movements and the words of the actors. It is a far bigger thing. It is an impression made on the spectators by ideas, sounds, colors, movements, lines, and all the other elements that move one in the theater. It is an emotional reaction to these elements, and to many others that are too subtle to be analyzed out of the total situation. In brief, a "play" is an effect made upon an audience.

Play production, then, is the process of building up this effect. It is an attempt to translate the vision of the author into a medium that will affect the spectator in the same way that the author has been affected. Play production is the union of two elements: the first is the author's idea, and the second is the interpretation of that idea by the aid of acting, costuming, scenery, and lighting.

In the professional theater of today any and every means may

[1] McConaughy, James L., *The School Drama*, p. 7.

be used to build up this interpretation of the author's idea, to make the production as effective as possible. The end, the effect upon the audience, is the only thing that is important. The success of a play depends entirely upon this effect. This is not the case with play production in the schools. In schools the *process* of play production is as important as, if not more important than, the product. Herein is the main difference between professional play production and educational dramatics. Nevertheless, there is but one art of play production, and so far as the practice of dramatics is an art it must have unity, just as do the arts of writing, or painting, or playing the violin. There is no amateur art of playing the violin in contrast to the professional art; there is only good violin playing and bad. And the same is true in play production. Differences between amateur and professional play production must be of degree, and not of kind. The fundamental difference, then, between educational and professional play production lies in the fact that in the former much of the value must lie in the process by which the product is produced. The aim in school dramatics must be to make the very best possible product by the most educational process. Educational dramatics may then be defined as that dramatic activity which attempts to produce a play by a process that is stimulating, instructive, and helpful to all the students involved.

EXTENT OF PLAY PRODUCTION IN SCHOOLS

Probably at no time in the history of education has play production been as widespread in schools as it is today. Fifteen years ago, in a study called *The School Drama*, the author says, ". . . today the educational value of our school dramatics is largely neglected, and, in practice, the School Drama hardly exists."[2] This statement may have been true at that time, although I am inclined to doubt it, but it is certainly no longer true. It is truer to say that today the School Drama is practically universal. In the Report of a High School Survey, made in 1927, the Committee of the Drama League of America gives a more accurate picture of the situation. It states:

> . . . we may say that our investigation revealed the fact that in the 386 schools reporting, out of the 112,000 students eligible for dramatics, some 59,000 were actively interested. If this survey represents an accurate cross section of

[2] McConaughy, *op. cit.*, p. 7.

the conditions of high school dramatics in this country we must infer that in the 20,000 accredited high schools alone there are, in round numbers, 3,000,000 students who are eager to participate in dramatics, an army as great as the entire population of Chicago. What an opportunity for the farsighted educator![3]

If play production is so widespread in the schools of the country, it is important to determine how well it is being practiced; that is, how skillfully the *process* of play production is being used as an educational device. It cannot be denied that this process depends to some extent upon the equipment provided for it. But, on the other hand, the equipment provided depends to a large extent upon the accepted aims of the process. What are, or what should be, the aims of play production in schools today?

HISTORY OF THE AIMS OF PLAY PRODUCTION IN SCHOOLS

History of drama in the schools goes back as far as history can trace education itself. But its aims have been diverse and changing; the reasons given for its existence have varied with educational methods and theories.

School drama, of a sort, may be discovered in the schools of both Greece and Rome:

> . . . The Greek youth recited Homer in their schools; they witnessed—if necessary at the State's expense—the plays of Sophocles, Euripides and Aeschylus; they were taught that oratory was the goal of education, and accordingly were trained for it. These and other poetic dramas furnished much of the material for the schools. . . . Likewise the Romans made use of drama for educational purposes; Livius Andronicus . . . translated the Greek dramas, which . . . became important as texts for schoolroom use.[4]

The aim of school drama among the ancients is suggested by the fact that "oratory was the goal of education." We may infer that the general purpose was to give the student the poise and the bearing that came from reciting the poetry contained in the Greek heroic plays. Certainly among the Greeks, and probably among the Romans, acting, in the modern sense, was rare if not unknown. There was very little attempt to assume character, or to suggest some one else. Even in the golden age of Greek drama, all the parts in any one play were played by three actors. Each actor, therefore, played several parts at once. He made his appear-

[3] *Report of the High School Survey*, Drama League of America, p. 5.
[4] McConaughy, *op. cit.*, pp. 7–8.

ance, recited the assigned lines, withdrew and changed his mask, and immediately came back to give the lines of some new character. Under these conditions, any real attempt at characterization is impossible; the Greek actor was merely an elocutionist. It is therefore likely that this phase of play production was utilized for educational purposes.

With the overthrow of the Roman Empire, schools disappeared for a time, and when they reappeared in connection with the churches and monasteries, little attention was paid for some centuries to the educational possibilities of school drama. Even in the Dark Ages, however, there is evidence of "adages" and "dialogues"; and Chambers says that "it is probable that in schools the exercise of reciting verse, and amongst other verse dialogue, had never died out since the time of the Empire."[5]

With the Revival of Learning, starting in the early thirteenth century, came the founding of the Grammar Schools on the Continent and in England, a movement that was to continue for three centuries and reach its climax in the reigns of Henry VIII and Elizabeth. In the Universities, too, came the classical influence, driving out scholasticism, and making Greek and Latin, especially Latin, the supreme subject of education.[6] The reason for this supremacy of Latin is explained by Leach:

> The learned professions required a competent knowledge of Latin far more directly then than now. A need for Latin was not confined to the church and the priest. The diplomatist, the lawyer, the civil servant, the physician, the naturalist, the philosopher wrote, read, and to a large extent spoke and perhaps thought in Latin. Nor was Latin only the language of the higher professions. A merchant, or the bailiff of a manor, wanted it for his accounts; every town clerk or guild clerk wanted it for his minute book. Columbus had to study for his voyages in Latin; the general had to study tactics in it. The architect, the musician, every one who was neither a mere soldier nor a mere handicraftsman, wanted, not a smattering of grammar, but a living acquaintance with the tongue, as a spoken as well as a written language.[7]

In the attempt to make Latin a spoken language, schoolmasters soon seized upon the plays. The comedies of Plautus and Terence appeared in every classroom, were read dramatically, and soon were utilized as material for school plays. It was but a step from giving actual comedies of the Latin comedians to writing Neo-

[5] Chambers, E. K., *The Mediæval Stage*, ii, p. 212.
[6] See Cubberley, E. P., *The History of Education*, p. 277, *seq.*
[7] Leach, Arthur F., *English Schools at the Reformation*, Part I, p. 105.

Latin plays in imitation of them, and that step was taken soon and often. Garnett and Gosse say:

> Side by side with this entirely democratic form of drama [i.e., the miracle plays] existed another, the toy of the learned, but unknown to the people, the scholarly imitation of Terence, written by professors and schoolmasters for representation by their pupils. On the Continent this form of drama flourished greatly during the later Middle Ages; in England the evidences of its existence are few and far between, but it certainly did exist.[8]

The reason for all these Latin plays is very obvious; their one purpose was to aid in the teaching of Latin, to give a fluency in the language, to make it a spoken and living thing.

In the fifteenth and sixteenth centuries, however, even as the great schools of the Renaissance were at the height of their success in making Latin scholars, there appeared a force that was eventually to overcome or change them—even though, in some instances, the change was to take two or three hundred years. This was what Professor Monroe calls "Realistic Education." It is represented by such educators as Comenius and Ratke, and such theorizers as Bacon and Milton in England. It is even found in such a prominent educator as Mulcaster, who, although himself the head of a famous Humanistic school, argued that "the study of the vernacular should precede both in time and importance the study of Latin."[9]

With the introduction of the vernacular into the curriculum in England, came the production of plays in English. The importance of this step in the development of Elizabethan drama may be estimated by the amount of space given to the facts in any history of English literature. "The first example of a play with a regular comic intrigue," say Garnett and Gosse, "worked out by the personages discriminated to the best of the author's ability, and divided into acts and scenes, was given by Nicholas Udall in *Ralph Roister Doister*, and constitutes a landmark in our literature, even though the play be bad and the author not much better."[10] Nicholas Udall was the Headmaster of Eton and later of Westminster, and it is thought that this play was written about 1540 to be played by the scholars at Eton. The first famous English farce, *Gammer Gurton's Needle*, appeared in 1552, the work of a

[8] Garnett, R., and Gosse, E., *English Literature*, ii, pp. 154–5.
[9] Monroe, Paul, *History of Education*, p. 466.
[10] Garnett and Gosse, *op. cit.*, p. 161.

mysterious "Mr. S., Master of Art," and was, according to its title page, "Played on Stage, not long ago in Christes College, in Cambridge." Thus, many years before 1576, when the first professional theater was built in England, the schools and colleges appear to have been active in play production. There are many evidences of performances in English as well as in Latin. The first group of professional playwrights, Lyly, Greene, Peele, Kyde, and others, were University men, known as the "University Wits," and undoubtedly got their first taste of the stage in their colleges. Even in the time of Shakespeare the school play and the boy companies were a serious rival to the professional theater, as the famous passage in *Hamlet* about "the little eyases" bears witness. Chambers says:

> During the earlier years of Elizabeth's reign the drama is under the domination of the boy companies. . . . Out of the seventy-eight rewards for Court performances between 1558 and 1576, twenty-one went to the Paul's boys, fifteen to the royal chapels, and ten to schoolboys, making a total of forty-six, as against only thirty-two paid to adult companies.[11]

The influence of the school plays on the Elizabethan dramatists and the Elizabethan stage is exceedingly important, and it is not inconceivable that without the school play there might not have been the great outburst of dramatic literature that is the glory of the Elizabethan era. All this has been discussed, however, in countless places.

The important thing to notice for our purpose is that as soon as the schools began giving plays in English new aims and reasons had to be discovered. Obviously the old ones, to make the students familiar with spoken Latin, were automatically discarded. Schoolmasters soon discovered that the presenting of plays "might give training in the English tongue."[12] Lord Bacon, according to McConaughy,[13] sums up the aims of school drama as being the development of the memory, voice, good pronunciation, decent carriage of body, gesture, and assurance. In this, it would seem that he goes back to the Greek idea: the play has value for the student because of the benefits gained by the student-actor in public performance. And it is on this obvious training in oratory and deportment that the school play was based.

[11] Chambers, E. K., *The Elizabethan Stage*, ii, p. 4.
[12] McConaughy, *op. cit.*, p. 12.
[13] McConaughy, *op. cit.*, p. 12.

In 1642, when the Puritans gained control, it became illegal to give dramatic performances in England, and the school play disappeared along with all others. It has never, until our own day, assumed its former importance. With the Restoration in 1660 came the reëstablishment of the drama as a popular amusement. But the school play did not reappear in its former vigor. In some of the great English public schools, especially Westminster and Winchester, the custom of giving a big annual performance soon hardened into school traditions which are still continued. *The Spectator* in 1711 referred to the fact that school boys might well "join in acting a scene of Terence, Sophocles, or our own Shakespeare."[14] But the activity which had reached its climax in the early seventeenth century did not reappear. Probably one of the reasons why the school play was frowned upon was the dissolute condition of the restored theater in the late seventeenth and early eighteenth century. The association between the stage and vice thus established in the minds of many people lasted for generations—and evidences of it may still be discovered in some districts of the United States. Therefore, it was only slowly and hesitatingly that the school dared again pick up the play as an instrument of education. And it is only within our own time that the school play has become as universal again as it was in the sixteenth century.

PRESENT ATTITUDE TOWARD PLAY PRODUCTION IN SCHOOLS

That the school play has again become universal is attested on every hand. The estimate of the Committee of the Drama League in their Report quoted above, showing that in the 386 schools replying to their questionnaire 59,000 students were actively interested in dramatics, gives an idea of the student interest.

On every hand English teachers are expected to be able to produce plays, and some training is often required by superintendents and boards of education. The tremendous increase in the enrollment in the classes in dramatics in teachers' colleges is a gauge of this interest. Dramatic schools of every sort vie with one another in appealing to teacher-directors with short teacher courses, special sessions, and the like.

The growing literature of the subject furnishes further evidence

[14] Addison and Steele, *The Spectator*. No. 230, November 23, 1711.

of its increasing prevalence. Since 1914 at least twelve important books on the general subject of play production have appeared. These books deal with amateur play production, but they all give generous space to the school drama. Books on special phases of play production, such as costuming, lighting, etc., are probably even more numerous, so that the total number of books published in the last fourteen years is undoubtedly greater than thirty. Educational magazines, like *The English Journal*, have printed numerous articles on the subject. The last few years have seen the publication of a very respectable number, certainly ten at least, of pamphlets containing bibliographies of plays for schools and little theaters. There is every literary evidence of a revival of the school play.

That this revival is, on the whole, being encouraged by school authorities should need no proof. Proof can, however, be given. Of 234 persons, representing schools of all sizes and in all parts of the country, who reported on the conditions of dramatic work in their respective schools (see page 16), 188 reported that it was "encouraged"; another 45, that it was "allowed"; and only one that it was "discouraged." The last report was amplified by the remark: "It is felt by the school principal that it conflicts with athletics, which he considers more important." In the main, the remarks are of quite a different sort: "The community is very sympathetic and welcomes dramatics in the school"; "Invariably successful"; "As we present the only plays in town, they are well attended"; "The high school furnishes much of the town entertainment"; and "School plays are the biggest events of the year, superseding lyceums, and other activities of this type."

There can be no doubt of the prevalence and importance of the school play in many towns and cities, but the question of how it is used and for what purposes is more important. It seems, unfortunately, to be true that in many schools the attitude toward the school play is still that of the sixteenth century. It is still regarded as a mere voice or body exercise, or as a harmless method of keeping students busy. In a surprisingly large number of schools it is considered an important means of raising money. Some of the remarks are: "Revenue from plays is the only means of supporting athletics and purchasing supplementary supplies"; "It is largely a money-making venture"; "Plays are encouraged, but not from a standpoint of love of art, more as a source of rev-

enue to aid other school activities"; and "It is a money-making device with an occasional burst of enthusiasm in dramatics determined by success of last play."

In other schools, however, and in a great and growing number, the school play is more properly regarded as an instrument of tremendous educational value.

NEW ATTITUDE TOWARD THE SCHOOL PLAY

This new attitude can be understood only in the light of what has happened in the professional theater in the last fifteen or twenty years. In the professional theater, too, there has been a great revival, a "new movement." This new movement has created the "Little Theater," and has in turn been modified and affected by its own creation. It is an exceedingly complicated thing, having its roots far back in the past, and being as yet nowhere perfected. It is all a confusion of theory and effort, with many and varied sources. To understand it one must know the lives and works of progressive men of the theater everywhere, both living and dead, men of every nationality and every age. Just as, according to Emerson, history is the biography of great men, we must say that the "new movement" in the theater is the biography of Schlegel, Feuerbach, Appia, Gordon Craig, Reinhardt, Stanislavsky, Antoine, Copeau, Arthur Hopkins, Maurice Browne, Bel-Geddes, and many others.

Perhaps there is no better description of this "new movement," than a paragraph in the first chapter of Kenneth MacGowan's important contribution, "The Theater of Tomorrow":

> The dominant quality in modern stage production is synthesis. For modern stage art, in spite of all the easel artists who may care to practice the painting of backdrops and let it go at that, is a complex and rhythmic fusion of setting, lights, actors, and play. There must be consistency in each of these, consistency of a single kind or consistency that has the quality of progression in it. And there must be such consistency among them all. Half the portrait, half the landscape, cannot be in Whistler's style and the other half in Zuloago's. The creation of a mood expressive of the play is, after all, the final purpose in production. It can no more be a jumble of odds and ends than the play itself.[15]

The men of the "new movement" feel that the old theater was too often a "jumble of odds and ends." The plays lacked artistic unity. The actors "acted" without thought for the central idea

[15] MacGowan, Kenneth, *The Theater of Tomorrow*, p. 23.

of the playwright, sometimes with little knowledge of what they were doing. The director was too often a mere expert in acting, with no artistic vision, no consistency. The producer sent to the scenery storehouse for a "parlor," or a "kitchen," or a "wood set," or whatever else was demanded by the author in the play. The costumes, if nothing suitable was in the costume room of the theater, were hired from the costumer who gave the best "bid"; or actors often used their own, for actors were expected to have an individual supply of historical, as well as modern costumes. The lighting was mainly a matter of luck, depending largely on the caprice of the mechanic who happened to be the electrician or the gasman.

But of late, even in the most commercial theater, all this has changed. A serious production is conceived of as a great artistic design, the work of a group of artists laboring understandingly together. The first of these artists is the author who conceives the play. The others are those who produce it for him, under the leadership of the director. Amateurs who do not have this idea of a play as a great artistic design, and who do not strive for this unity, lose much of the pleasure and profit that lies in the practice of dramatic art. When this idea is lacking, dramatics become a mere harmless exercise, entailing certain benefits, perhaps useful as a source of revenue, but achieving nothing as a dramatic contribution. When the new idea is paramount, it is the great synthesis of nearly all the other arts and crafts. The dramatic art is essentially the most democratic of the arts, as it is the latest to develop in its fullness. One man can paint a picture, or carve a statue, or even make music for himself; but the dramatic art involves group activity of a peculiarly socialized sort. Even if it be conceivable that one man could write a play, set and light it for himself, be himself the only actor, still he must have an audience; for in a very true sense the play cannot exist in the empty theater, for the production of a play is the creation and the transfer of a mood. There must be somebody to be affected if there is to be a real play.

So regarded, play production is an educational instrument of untold possibilities which is beginning to be used in some schools. It involves activities as diversified as directing, acting, writing, designing, managing, carpentry, stage lighting, costuming, and so on. The girl who makes a costume that is a successful part of the

great design, or the boy who helps get the proper kind of audience, is helping to produce the play just as actually as the girl who plays the leading rôle. Merely to have students learn the lines of a play, and say them on any kind of stage, before any sort of setting, with nondescript lighting, is not really educational dramatic art at all. Students must be given the opportunity to *create* a production. They should design and build their scenery and costumes;[16] they should experiment with the most wonderful of all dramatic mediums, light; they should try out their ideas of stage and business management. Actors are not more important in the great design than stage hands or ushers. Even the player of the most important character must feel his own subordination to the central idea. Play production of this sort is a synthesis of all the arts and crafts, and is "educational" in every way and in the truest sense. It is the kind of education conceived by John Dewey as involving "a context of work and play in association with others." He says:

> The plea which has been made in this book [*Democracy and Education*] for education through continued constructive activities rests upon the fact they afford an opportunity for a social atmosphere. In place of a school set apart from life as a place for learning lessons, we have a miniature social group in which study and growth are incidents of present shared experience. Playgrounds, shops, workrooms, laboratories not only direct the natural active tendencies of youth, but they involve intercourse, communication, and coöperation,—all extending the perception of connections.[17]

Better than any other single institution, the school stage can be at once a playground, shop, workroom, and laboratory; and experience proves what an appealing one youth finds it. Trained teachers of play production, working in simple but properly constructed stages in our schools and colleges, could make a vital and valuable contribution to American education.

Unfortunately, there are still few trained teachers, but they are becoming more numerous every year. University courses and dramatic schools are more and more giving the correct kind of work for teachers of play production. It is a profession that appeals to many artistic people, and as the opportunities increase the trained teachers will certainly appear.

The situation in regard to adequate equipment is still more

[16] The theory and practice of all these technical matters is described in my book: *The Book of Play Production.*

[17] Dewey, John, *Democracy and Education*, p. 416.

unfortunate. Splendid school buildings are built in all parts of the country with auditoriums designed to be used for school dramatics, and almost universally they are totally unsuited for this purpose. Even the trained teachers in the schools are working under impossible handicaps. They are laboring under conditions somewhat like those which confronted teachers of science when the sciences were first introduced into the curriculum. Possibly they are worse off, for while the early teachers of science had no equipment, the early teachers of dramatic art have bad equipment, which makes it impossible to do the thing correctly. The tragedy of the situation is that adequate auditoriums and stages could be built and maintained at no greater, if not at less, expense than those in and on which the pioneer teachers of dramatics are now obliged to work.

Hence, the subject of this study, dramatic equipment in schools, is an important one. I propose to investigate two main questions:

1. What is the actual situation today in schools in regard to dramatics and dramatic equipment?

2. What is the correct and desirable equipment?

PART II

PRESENT PRACTICE AND EQUIPMENT IN SCHOOLS

A very fair estimate of the present situation in the country at large in regard to the present practice and the equipment for play production may be obtained by a study of the answers that have been obtained to the following questionnaire:

Date

1. Your position (i.e., teacher of English, principal, superintendent) .....
   .....
2. Name of your school .....
   Its location .....
   Number of students .....
   (If you are a superintendent or supervisor, please give the number of children in your charge.)
3. Attitude of the authorities (i.e., principal, superintendent, board of education, or community at large) towards dramatics in the school. Please check:
   The giving of plays is encouraged ....., allowed ....., discouraged .....
   Remarks: .....
4. Plays given by your school for the public, either with or without charge, during the past two years: .....
5. By what organization are plays sponsored—dramatic club, senior class, etc.? .....
6. Are dramatics part of the school work, or are they extra-curricular, or both? .....
7. Has the school a trained teacher in charge of dramatic work? .....
8. The auditorium:
   1. Do you have a suitable auditorium? .....
   2. Is it in the school building? .....
   3. Is it usually available for rehearsals or other dramatic work, or may it be used only for performances? .....
9. The stage:
   1. What is the approximate width and depth of the stage? .....
   2. Has it a regular proscenium arch and curtain? .....
   3. Is there space overhead and rigging for the handling of scenery? .....

10. Costumes and scenery:
    1. Do you use painted scenery? .....
    2. If so, is it made by the students? .....
    3. Are the costumes made by the students? .....
    4. Who directs this work? .....
    5. Are there any workshops available for the making of scenery, costumes, etc.? .....
11. Lighting:
    1. Do you have any system of stage lighting? .....
    2. Do you have footlights? ..... Border lights? .....
    3. How many spotlights have you? ..... How many flood lights? .....
    4. Do you have a switchboard, with dimmers, etc.? .....
12. Additional information or remarks about the dramatic work in your school .....

Answers have been obtained from students in various classes in Teachers College, Columbia University, and from distribution by mail. From the several hundred received, 234 sets of answers from high schools were selected to form the basis for the figures in this chapter. A few that were illegible or unintelligible, a score or so that dealt with elementary schools, a large number from normal schools and colleges, and a still larger number filled in by superintendents and applying to entire school systems, have been excluded. I believe that the 234 are sufficient to give an accurate estimate of conditions in the high school, especially as the distribution is such that schools of all sizes and in practically all parts of the country are represented. Moreover, the replies are not predominantly from any one group, but from teachers, principals, and superintendents.

DISTRIBUTIONS

For the sake of study the schools represented have been divided into three classes, large, medium, and small. All schools reporting more than 1,000 pupils are called large, those with less than 1,000 but more than 200 are called medium, and those with less than 200, small. The distribution by size of school is as follows:

Schools with more than 1,000 students	46
Schools with 1,000 to 200 students	82
Schools with less than 200 students	106
Total	234

This division is rather arbitrary, but some interesting facts develop in studying the answers of the schools classified according to size, and any such division as to classes is open to some objection. The figures of the number of schools reporting must be kept in mind, as they form the basis for all the percentages to be computed.

The distribution by states, and by persons reporting, has little significance, except as it shows the spread of the questionnaire. Forty-two of the states are represented: eleven southern, five western, sixteen central, six eastern, and four from New England.

The distribution by states is shown in Table I.

TABLE I

Distribution by States of Schools Reporting on the Present Practice and Equipment for Play Production

Alabama	3	Mississippi	2
Arizona	1	Missouri	7
Arkansas	3	Montana	1
California	2	Nebraska	11
Colorado	3	New Jersey	7
Connecticut	3	New York	27
Delaware	1	North Carolina	14
District of Columbia	2	North Dakota	3
Florida	5	Ohio	17
Georgia	3	Oklahoma	5
Idaho	1	Oregon	2
Illinois	5	Pennsylvania	33
Indiana	18	Rhode Island	1
Iowa	4	South Carolina	1
Kansas	4	South Dakota	5
Kentucky	6	Tennessee	2
Maine	1	Texas	4
Maryland	4	Vermont	1
Massachusetts	1	Virginia	2
Michigan	4	West Virginia	10
Minnesota	1	Wisconsin	4
		Total	234

The distribution by persons reporting is shown in Table II.

TABLE II

DISTRIBUTION BY PERSONS REPORTING ON THE PRESENT PRACTICE AND EQUIPMENT FOR PLAY PRODUCTION

Teachers of English	95
Teachers of other subjects	37
Principals	37
Superintendents	58
Unclassified	7
Total	234

EXTENT TO WHICH DRAMATICS ARE ENCOURAGED

One of the first questions on the questionnaire asked about the attitude of the authorities (i.e., principal, superintendent, board of education, or community at large) toward dramatics in the schools. Persons filling in the answers were asked to check the statement true in their schools, whether the giving of plays was encouraged, allowed, or discouraged. The replies are tabulated in Table III.

TABLE III

ATTITUDE TOWARD DRAMATICS IN THREE CLASSES OF SCHOOLS

	Large Schools	Medium Schools	Small Schools	Total
Plays are encouraged	37	67	84	188
Plays are allowed	9	14	22	45
Plays are discouraged	0	1	0	1
Total	46	82	106	234

It will be noticed that in only one instance was it reported that the giving of plays was discouraged, and, as has been stated above, the teacher filling in the blank added an explanatory remark, "It is felt by the school principal that it conflicts with athletics, which he considers more important." The percentage of schools in which plays are encouraged is suprisingly constant, being as follows:

Large schools	80%
Medium schools	80
Small schools	79

Some of the remarks (quoted on page 8) show the attitude in schools where it is encouraged.

Quite typical, probably, of the attitude of the schools where plays are allowed is the remark: "Providing they do not interfere with school work." These schools do not consider dramatics "school work," and probably in those schools they are not worthy of being so considered. They have the old idea of the school play as a social function merely. Some of the persons replying had an understandable difficulty in deciding whether plays were really encouraged, or merely allowed. One says, "Senior play is an institution; others must prove their reason for being to the principal"; another, "Plays are certainly not encouraged by the board members, but parents like to have their children in plays"; and still another states what is a common situation, "Plays are 'encouraged', but no provision is made for them."

Still it seems evident that on the whole the attitude of the authorities is very favorable. They feel, often perhaps in a vague way, that school plays are worth while, and, whatever be the reasons, 80 per cent of them are reported as encouraging the giving of school plays.

CHOICE OF SCHOOL PLAYS

A study of the plays actually presented in the various schools may explain to some extent why production is not universally received with enthusiasm as an educational process of great merit. Some of the plays given are quite worthless, and can have little educational value. For the sake of tabulation, I have divided the plays listed into five groups: (1) Plays by obscure or unknown authors, (2) Broadway successes, (3) Standard modern plays, (4) Classics, (5) Adaptations. This is the classification used by the Committee of the Drama League in their survey several years ago, and it seems a most useful one. The basis of this classification is as follows:

1. *Plays by obscure and unknown authors* are by authors whose output is confined to production only in schools or by amateur groups. These plays are never produced in the professional theaters.

2. *Broadway successes* are plays of a popular nature which have been produced with some success in the professional theater.

3. *Standard modern plays* are those by authors of recognized literary skill—Shaw, Barrie, Ibsen, Galsworthy, O'Neill, and others.

4. *Classics* are plays of acknowledged greatness, those of Shakespeare, Sheridan, Goldsmith, and Molière, for instance.

5. *Adaptations* are plays made from novels or poems, such as "Treasure Island," "The Christmas Carol," "The Lady of the Lake," etc.

The plays given on the lists received, tabulated according to these classifications, are shown in Table IVA.

TABLE IVA

TYPES OF PLAYS PRESENTED IN THREE CLASSES OF SCHOOLS

	Large Schools	Medium Schools	Small Schools	Total
Obscure authors	30	78	142	250
Broadway successes	80	114	92	286
Standard modern	19	3	1	23
Classics	8	9	5	22
Adaptations	1	2	5	8
Total	138	206	245	589

Of the total of 234 sets of answers, 41 contained no play list, as the person answering the questionnaire could not always recall any plays that had been presented. This was true in the case of 4 large schools, 14 medium schools, and 23 small ones. Therefore, the total number of plays presented, 589, represents the work of 193 schools only. I do not believe that this has any effect on the conclusions that may be drawn from the list, for the proportion of plays falling into the different classifications seemed very constant, as could be noted as the tabulation was recorded. It is to be noticed that nearly half of the plays listed are *Broadway successes*, while those by *obscure* or *unknown authors* are second. For the entire group of schools, the percentages are as follows:

Obscure authors	42.44%
Broadway successes	48.55
Standard modern	3.90
Classics	3.73
Adaptations	1.35

The conclusion follows that 91 per cent of the plays at present produced in schools are either Broadway successes or plays by obscure or unknown authors. These may well be considered non-literary plays. This conclusion agrees with that of the Committee of the Drama League, but is rather more emphatic, as their figures show that only about 86 per cent of the plays given on their lists are in these classes. By giving the percentages for each group of schools, as is done in Table IVB, it is possible to determine whether or not the size of the school affects the percentage of non-literary plays produced.

TABLE IVB

PERCENTAGE TABLE SHOWING DISTRIBUTION OF FIVE TYPES OF PLAYS

	Large Schools	Medium Schools	Small Schools
Obscure authors	21.74%	37.86%	57.96%
Broadway successes	57.97	55.34	37.56
Standard modern	13.77	1.46	0.40
Classics	5.80	4.37	2.04
Adaptations	.72	.97	2.04

Several interesting facts are shown by this tabulation. As might be expected, the greater proportion of plays by obscure authors are found in the smaller schools: only 21.74 per cent of plays in the larger ones are in that class, but the figure rises to 57.96 per cent in the smaller schools. That is, in the larger schools, one play in five is by an obscure or unknown author, while in smaller schools one play in two is of that type. The situation in regard to Broadway successes is almost reversed. More than half the plays done in larger schools are in that classification, or more than one out of two, while in the smaller schools the proportion sinks to one out of three. The proportion of standard modern plays used in large schools is nearly 14 per cent, but in medium schools it drops to nearly 4 per cent, and in the smaller schools it is negligible. The classics are more often found in larger schools, too, and the percentage drops steadily with the size of the school. On the other hand, the adaptations are found almost entirely in smaller schools, and this, too, might have been expected: it is a natural course for an untrained teacher of English, knowing little about dramatic form and wishing to increase the

interest of her students in literature, to turn to the adaptations of the standard literary works that are part of the regular English curriculum.

This entire question of play choice is influenced not only by the taste of the teacher and of the community, but also by the matter of royalty. Few of the plays by obscure authors demand the payment of royalties, but Broadway plays do; hence it might be expected that the former would be most frequently found among the smaller schools, which are unable to take the financial risk involved in paying a royalty.

It is interesting to note which plays are actually produced most frequently, and the list below shows all plays mentioned three or more times. The plays most often given are the Broadway successes of eight or ten years ago, listed in Table V.

Although 91 per cent of the plays listed are Broadway successes or plays by obscure authors, it is probably very misleading, and unduly pessimistic, to assume that this 91 per cent are without literary value. In the first place, it is exceedingly difficult to determine exactly what is meant by "literary value" in a play. Brander Matthews says it is that element present in a play when "the finer attributes of structure and style are added to essential theatrical effectiveness."[1] But he adds,[2] "Literary quality is something that may be added to a drama, but which is not essential to its value as a play in the theater itself." Most of the plays on the above list are "good theater," that is, they have theatrical effectiveness on the stage, and there cannot be the slightest objection to their use in schools. "Seventeen," "Clarence," and "Penrod" are by Booth Tarkington, and are well written from every point of view, even though no critic would classify them as great drama. "The Goose Hangs High" is a play of more than usual merit. "The Youngest" and "You and I" are by Philip Barry, a young American playwright with a gift for writing dialogue of real charm—a playwright of promise, whose future plays may rise to real greatness. Two of the plays, "Green Stockings" and "The Lion and the Mouse," are successful theater plays of a preceding generation. Barrie's "Quality Street," Rostand's "The Romancers," and France's "The Man Who Married a Dumb Wife," although successful Broadway plays

[1] Matthews, Brander, *A Study of the Drama*, p. 8.
[2] *Ibid.*, p. 21.

of our time, are already ranked among theater classics. From any common sense point of view this is a very respectable list.

TABLE V

PLAYS MOST FREQUENTLY PRODUCED

Play	No. of Times Mentioned
Come Out of the Kitchen	27
Seventeen	26
The Goose Hangs High	22
The Charm School	16
Clarence	13
Daddy-Long-Legs	13
Adam and Eva	11
The Whole Town's Talking	10
Nothing But the Truth	9
Green Stockings	8
Penrod	6
Turn to the Right	6
The Youngest	6
The Arrival of Kitty	6
The Patsy	5
Dulcy	5
Quality Street	5
The Romancers	5
Smilin' Through	4
Seven Keys to Baldpate	4
Peg o' My Heart	4
Stop Thief	4
She Stoops to Conquer	3
Tweedles	3
The Merchant of Venice	3
You and I	3
The Gypsy Trail	3
Mrs. Bumpstead-Leigh	3
The Poor Nut	3
The Lion and the Mouse	3
Beau Brummel	3
Kempy	3
A Midsummer-Night's Dream	3
The Man Who Married a Dumb Wife	3
Hamlet	3
The Tailor-Made Man	3

It is only natural that these Broadway plays should be used, especially in the smaller cities and towns where there is no professional theater. They are the plays that have pleased large audiences in the big cities, and they have attracted attention in the papers and magazines of the country at large. Even school plays must please the audiences; and, as one teacher reports, "The community is very sympathetic and welcomes dramatics in the school, but favors popular type somewhat more than those of literary value."

The plays by obscure or unknown authors are more to be regretted. However, they were much more common in the catalogues of play publishers catering to school groups twenty years ago than they are today. Unfortunately, they still exist, as the figures show, in large numbers. There is no moral objection to any of these plays, of course, but, from the point of view of dramatic art and education, they are very weak fare. They are typified by certain of the lists reported. A small high school in Connecticut reports "The Real Thing after All," "Corner on the Campus," and "Tommy's Brides." One high school in North Dakota has played "All a Mistake" and "Mr. Briggs of the Poultry Yard." Another small school, this time in Kansas, lists "That's One on Bill," "Just Like Percy," and "It's Up to You." But lists of this sort are very rare. Usually, even where plays of this nature are listed, one or two Broadway plays are also named, and sometimes even real literary plays. On the whole, the situation is decidedly encouraging, and I feel certain that the standard of play produced is steadily, although slowly, rising.

This is the impression of several men in dramatic work in different parts of the country with whom I have discussed this subject. The following note from Professor Frederick H. Koch, of the University of North Carolina, founder of the Carolina Playmakers, is typical of the general impression. He says:

> There has been a remarkable improvement in the quality of the plays produced in high schools and colleges within the last ten years. The majority of the school plays have real dramatic significance. They present real characters speaking convincing dialogue—often the picturesque vernacular of our everyday life. Such plays may not be literary masterpieces, but they are certainly not the "hokum" plays that prevailed on our school stages ten years ago. The great change for the better shown in the professional theater is certainly reflected in our schools.

The last statement is exceedingly important. Schools playing Broadway plays of today are producing much better plays than were presented on Broadway even ten years ago.

So far, the discussion has been confined entirely to long plays, and these are far in the majority. In spite of the rise of the one-act play in the last twenty years, it is still not popular. Even the Little Theaters seem to have turned from it, and it has never been a serious factor on Broadway. In the last ten years I have asked hundreds of students if the one-act play was an integral part of their school play production, and the great majority have always reported that it was unpopular. Audiences, especially audiences in small towns, do not like one-act plays, and feel unsatisfied unless they have seen a long one. In many ways, this is to be regretted, for the one-act play has many points of advantage for the school producer. A program of one-act plays usually provides a greater variety of interesting problems in acting and producing than a long play. And, in general, a short play is easier for the amateur actor. The problem of successfully creating a character to be seen for a short time only, under stress of a single incident, is less than that of showing the consistent character development usually required in a longer play. Schools could probably do much more with the one-act play than they usually do, but the fact remains that it is not widely used. Only 173 one-act plays were reported. Table VI shows the distribution and percentage of one-act plays per school:

TABLE VI

Distribution and Percentage of One-Act Plays

	Large Schools	Medium Schools	Small Schools
Distribution of one-act plays	59	50	64
Percentage of all plays reported	1.40%	.74%	.77%

It will be noted that larger schools use one-act plays twice as often as medium or smaller schools do. These figures agree with the conclusions of most observers.

Table VII shows the one-act plays most frequently listed:

TABLE VII

ONE-ACT PLAYS MOST FREQUENTLY LISTED

Play	No. of Times Mentioned
The Maker of Dreams	8
The Trysting Place	8
Two Crooks and a Lady	7
The Florist Shop	5
Station YYYY	5
The Valiant	4
The Diabolical Circle	3
Spreading the News	3
Six Who Pass While the Lentils Boil	3
Three Pills in a Bottle	3
Suppressed Desires	3
'Op o' Me Thumb	3
Joint Owners in Spain	3

These plays are undoubtedly higher in literary value than the long plays, as a whole, and it is encouraging to feel that they are being used. The Committee of the Drama League reports, that "the number of one-act plays used, almost negligible in 1918, has increased steadily during the six-year period covered by this survey." Such may be the case.

The wider use of the one-act play, the improvement in the average Broadway success, the opinions of competent observers like Professor Koch, all these would lead us to conclude that good plays are much more common than they used to be; certainly the cheap "entertainment" play is less prevalent than it was.

ORGANIZATION OF DRAMATIC WORK

The question of how dramatic work is organized in the schools was the next one considered in the questionnaire. The persons filling in the answers were asked what organization in the school sponsored the work in dramatics. The answers are revealed in Table VIIIA:

TABLE VIIIA

ORGANIZATION SPONSORING DRAMATIC WORK

	Large Schools	Medium Schools	Small Schools	Total
Dramatic Club	9	22	8	39
Classes	8	18	50	76
Faculty	2	3	5	10
Miscellaneous	27	39	43	109
Totals	46	82	106	234

Again, by reducing these figures to the percentages of the total number of schools reporting in each group, as has been done in Table VIIIB, it will be easier to draw conclusions from the distribution.

TABLE VIIIB

RESULTS OF REDUCING FIGURES OF TABLE VIIIA TO PERCENTAGES

	Large Schools	Medium Schools	Small Schools	Average
Dramatic Club	19.56%	26.83%	7.55%	16.67%
Classes	17.39	21.96	47.17	32.48
Faculty	4.36	3.65	4.71	4.27
Miscellaneous	58.69	47.56	40.57	46.58

In the above tabulations, "Miscellaneous" means that more than one body was mentioned as sponsoring plays, and in most of these cases several were mentioned: "Dramatic Club, Senior Class, Junior Class, Musical Club." The high percentage of "Miscellaneous," therefore, establishes the fact that there is usually no single group around which the dramatic work of the school is centered. Any club or any class gives a play whenever the spirit moves. Those cases listed as "Faculty" mean that in these schools there is no student organization for the sponsoring of plays, but in each of these cases some one member of the faculty assumes control. Many other interesting conclusions may be drawn from this tabulation, but perhaps they are not very pertinent to the present investigation. It may be noted, however,

that the Dramatic Club is more common in the medium-sized schools than in either the large or small ones, while the custom of having plays given by the classes, usually the senior class, increases in percentage inversely with the size of the school. That is, a much greater proportion of the dramatic work in small schools is in the nature of class plays than in the larger schools.

The pertinent fact to be noticed in the above figures is that in most schools there is no one system of producing plays, but they are given by almost any and every organization.

A second, and perhaps a more important, consideration deals with the place of dramatics in the school curriculum. The question asked was whether dramatics was part of the school work, or extra-curricular, or both. The figures are shown in Table IXA:

TABLE IXA

PLACE OF DRAMATICS IN THE SCHOOL CURRICULUM

	Large Schools	Medium Schools	Small Schools	Total
Part of school work	3	7	6	16
Extra-curricular	25	58	73	156
Both	18	17	27	62
Total	46	82	106	234

Table IXB shows a reduction of these figures to percentages:

TABLE IXB

RESULTS OF REDUCING FIGURES OF TABLE IXA TO PERCENTAGES

	Large Schools	Medium Schools	Small Schools	Average
Part of school work	6.52%	8.54%	5.66%	6.84%
Extra-curricular	54.35	70.73	68.87	66.66
Both	39.13	20.73	25.47	26.50

In this tabulation, "Part of school work" means usually that the plays are produced by a class as part of the class work; sometimes the class is in dramatics or play production; sometimes it

may be an English class. In these cases, presumably, students get the same sort of credit for play production that they do for any other subject. As a matter of fact, however, even in these cases there is probably much extra outside work involved, just as there is for members of a school football team who receive "credit" for a physical education course while they are playing. In each group but few schools report this situation, and the figure is fairly constant, varying less than 3 per cent.

As might be expected, the proportion of schools in which dramatics are entirely extra-curricular is very large, exactly two-thirds of the entire number of schools reporting.

The term, "both," is used here to indicate that there is some school credit for some of the work in play production. Sometimes there is one class in production, for which students may receive credit, and students in this class are expected to help in the production of school plays. The school plays are what might be called the laboratory work of the course. But many students not in the course take part in the school plays, and for them it is entirely extra-curricular. The fact that the figure for large schools is greater than for the smaller schools points out what is to be expected: more larger schools have courses in play production. By adding the percentages of schools reporting dramatics as part of the school work and those who report it as "both," we shall find out what proportion of schools gives courses of some sort in play production for which the students may receive credit. The figures are as follows: for large schools, 45.65 per cent; for medium schools, 29.27 per cent; and for small schools, 31.13 per cent. In my opinion, this is a surprisingly large percentage, for it was not many years ago that dramatics were undreamed of as an accredited school subject.

It may be concluded, therefore, that although in most schools there is no centralized system for controlling school plays (they are still in two-thirds of the schools entirely extra-curricular), in a surprisingly large and growing number of schools some form of play production is being introduced as an accredited subject.

PROPORTION OF TRAINED TEACHERS

The next question asked was whether the school had a trained teacher in charge of the dramatic work. The answers, in actual numbers and in percentages, are shown in Table X.

TABLE X

NUMBER AND PERCENTAGES OF SCHOOLS EMPLOYING TRAINED TEACHERS FOR WORK IN DRAMATICS

	Large Schools	Medium Schools	Small Schools	Total
Trained teachers	32*	53	40	125
Percentage	76.74%	64.63%	37.73%	54.11%

* Three large schools did not reply to this question, so the percentage is derived from 43, and not from 46, schools.

Thus, over half of the schools reporting had teachers trained in dramatic work. The percentage was twice as great in large schools as in small ones. In other words, in large schools three out of four of the teachers engaged in dramatic work have had some training for it, but in small schools this is true of only one out of every three. It may be rightly objected that "training" is a rather flexible term, likely to be interpreted in various ways by the persons filling in the questionnaire. Such is, of course, the case. In many instances, the "training" may have been only an active interest in dramatics in college. In others it means a summer school course in play production. Still, it is significant that so many schools should have teachers with dramatic training of any kind whatsoever, and there can be little doubt that better trained teachers are growing more numerous every year.

QUESTION OF SUITABLE AUDITORIUMS

The remaining questions on the questionnaire which are more technical, endeavor to establish the present situation in regard to equipment for play production in the schools. The first element considered was the auditorium, and the question was asked whether or not the school possessed a "suitable" one. The question immediately arises as to what a "suitable" auditorium is; but as that is, in the main, the subject of this study, and a subject which will be considered in detail in Part III, for the present purpose it must be interpreted as meaning an auditorium more or less satisfactory in the opinion of the person filling in the answers. From any exact point of view there can be little doubt that most of the auditoriums reported as suitable are poorly fitted

for real play production. No auditorium lacking a proscenium arch and curtain, or having a stage the size of some of those reported, or lacking any real system of stage lighting, can be suitable for a well-trained teacher. But even though the term be interpreted in this broad and loose manner, the figures are enlightening, and give a rough picture of the situation.

The actual figures are shown in Table XIA:

TABLE XIA

NUMBER OF SCHOOLS REPORTING ON AUDITORIUM EQUIPMENT

	Large Schools	Medium Schools	Small Schools	Total
Suitable auditorium	41	65	60	166
Unsuitable auditorium	4	13	27	44
No auditorium	1	4	19	24
Total	46	82	106	234

The percentages are shown in Table XIB:

TABLE XIB

RESULTS OF REDUCING FIGURES OF TABLE XIA TO PERCENTAGES

	Large Schools	Medium Schools	Small Schools	Average
Suitable auditorium	89.13%	79.23%	56.60%	70.94%
Unsuitable auditorium	8.70	15.85	25.47	18.80
No auditorium	2.17	4.88	17.93	10.26

From these figures, some conclusions can be accurately drawn, however "suitable" be interpreted. The presence of a suitable auditorium decreases directly with the size of the school; and conversely, the presence of an unsuitable one, or the absence of any, increases inversely as the schools decrease in size. Most of the schools reporting no auditorium, explain that they use some other hall in town, not infrequently the "Opera House." It should be noted that, by and large, one school in ten has no auditorium at

all. On the other hand, however, over 70 per cent of the schools, or nearly three-quarters, report auditoriums with which they are satisfied.

To determine just how useful the auditoriums are for dramatic work in the schools, the next question asked was whether or not the auditorium was available for rehearsals and other dramatic work, or if it could be used only for performances. Table XII shows the result of this question:

TABLE XII

NUMBER AND PERCENTAGES OF SCHOOLS IN WHICH AUDITORIUM IS AVAILABLE FOR REHEARSALS

	Large Schools	Medium Schools	Small Schools	Total
Available	44	68	78	190
Percentages	95.65%	82.93%	73.58%	81.19%

Here, again, as might perhaps have been anticipated, the larger schools are better off than the smaller ones, in that they permit more use of their auditoriums for dramatics. In my opinion, the availability shown is surprisingly large, being much greater than I had anticipated. It was expected that there would be many more replies than were recorded similar to the following ones: "Group using best argument gets auditorium," "Available for rehearsals if you're lucky," and "Compete with band, orchestra, debate, and assemblies." But the figures seem quite encouraging.

SCHOOL STAGES

The next section of the questionnaire dealt with the school stage. The section falls into three divisions: the first deals with the size of the stage, the second with the existence of a regular proscenium arch and curtain, and the third with the equipment of the stage with overhead space and rigging for the handling of scenery. All these points will be discussed at length in Part III, but perhaps it ought to be said here that it is adequate size, proscenium arch and curtain, and proper rigging that make a modern theater out of a platform. Without them, modern play produc-

tion is impossible. Therefore, although educational dramatics of a sort are possible in a large room, or in an auditorium that contains only a platform,[3] true modern play production can be achieved only in a correctly equipped theater. It is from this fact that the answers given attain their significance.

Table XIII shows the sizes reported. For the sake of convenience in listing and comparing, I have reduced all the dimensions given to the nearest *five*. Thus a stage reported as 18 feet wide and 12 feet deep appears in the list as 20 x 10 feet, while one 33 x 18 feet is given as 35 x 20 feet. I feel that the slight loss in accuracy is justified by the obvious usefulness of reducing the dimensions to a common factor. In any case, the answers given are probably not very accurate, for the figures are likely to repre-

TABLE XIII

SIZES OF STAGES REPORTED BY THREE GROUPS OF SCHOOLS

Width Depth	Times Reported	Width Depth	Times Reported
15′ x 10′	1	40′ x 30′	12
20 x 10	7	x 35	3
x 15	6	45 x 20	1
25 x 10	4	x 30	1
x 15	14	50 x 20	3
x 20	6	x 30	7
x 25	1	x 35	2
30 x 10	4	x 40	1
x 15	17	55 x 20	1
x 20	35	60 x 30	3
x 25	9	x 40	3
x 30	1	70 x 30	1
35 x 15	6	75 x 30	1
x 20	7	80 x 30	1
x 25	4	x 40	1
x 30	4	90 x 45	1
40 x 10	1		
x 15	2	Total No. of Stages Reported	197
x 20	14	Not answered	37
x 25	12		
		Total No. of Schools	234

[3] Educational dramatics of this sort are discussed at length in my *The Book of Play Production*, pp. 79–92.

sent a guess on the part of the person filling in the questionnaire rather than actual measurement. The great majority of the figures given were already in fives, and needed no change.

It may be seen that the size of school stages varies from 15 x 10 feet to 90 x 45 feet! It is difficult to say which teacher deserves the more commiseration, the one who has to work on the former size or the one working on the latter, for both are probably impossible. It should be noted that the size, 30 x 20 feet, appears most often, and is followed by 30 x 15 feet. Unfortunately, none of these figures are specific enough to be of much value. The question was not well worded. The important thing is the width of the proscenium arch, and the relationship between this dimension and the total width of the stage from wall to wall. This will be discussed later. Probably all that can be concluded from this table is that there is an enormous variation in the size of stages in schools, and that many are too small to be practical and many are too large.

In Table XIV will be found the answers given as to whether the stage was built with a regular proscenium arch:

TABLE XIV

NUMBER AND PERCENTAGES OF SCHOOLS HAVING STAGES BUILT WITH PROSCENIUM ARCH

	Large Schools	Medium Schools	Small Schools	Total
Proscenium arch	42	63	61	166
Percentages	91.09%	76.82%	57.54%	70.51%

These figures agree very closely with those which show the schools reporting suitable auditoriums, so that possibly most of the persons filling in the answers judged of the suitability of the auditorium by the presence or absence of a proscenium arch. As usual, the larger schools have an advantage, and are very much better supplied in this respect than are the smaller schools. But one fact to be noted is that in nearly three-quarters of the schools (70.51 per cent) a proscenium arch has been built, which would tend to prove that the authorities and the architects were trying

to build a theater. In the other cases, where there is an auditorium, the stage is a mere platform, and this fact is reported in a number of the replies. A very few schools report that they have a stage curtain, but no proscenium arch; usually this curtain is an afterthought, and not very satisfactory.

In the matter of overhead space and rigging, without which no stage can be considered complete for modern stage production, the school stages are very poorly equipped. The figures appear in Table XV:

TABLE XV

NUMBER AND PERCENTAGES OF SCHOOLS HAVING STAGES PROVIDED WITH OVERHEAD SPACE AND EQUIPPED WITH RIGGING

	Large Schools	Medium Schools	Small Schools	Total
With space and rigging	27	29	28	84
Percentages	58.60%	35.36%	26.41%	35.89%

If the figures given above are compared with those for the proscenium arch, it will be seen that just about half the stages having arches are equipped with space and rigging. As usual, the larger schools are better supplied than the smaller ones.

This investigation of the school stage seems to support the following conclusions:

1. School stages vary greatly in size, but the majority of them are large enough for adequate work in play production, or they would be large enough if their space were correctly arranged.
2. Three-quarters of these stages are equipped with proscenium arches.
3. Only about one-third of these stages are supplied with overhead space and rigging for the handling of scenery.

STAGECRAFT IN THE SCHOOLS

The purpose of the questions in the next section of the questionnaire was to determine to what extent schools are availing themselves of the opportunity that exists to give students the artistic experience that arises in the craft side of play production. Five

questions were asked: (1) if painted scenery were used; (2) if so, if it were made by the students; (3) if students made the costumes; (4) by whom this work was directed; and (5) if workrooms of any sort were available.

The first three are all part of one question of fact, and the figures appear in Table XVIA:

TABLE XVIA

TOTAL NUMBER OF SCHOOLS USING PAINTED SCENERY MADE BY STUDENTS AND NUMBER OF SCHOOLS IN WHICH STUDENTS MAKE COSTUMES

	Large Schools	Medium Schools	Small Schools	Total
Use painted scenery	41	55	60	156
Made by students	22	20	37	79
Make costumes	27	54	65	146

Table XVIB shows the results from reducing these figures to percentages:

TABLE XVIB

RESULTS OF REDUCING FIGURES OF TABLE XVIB TO PERCENTAGES

	Large Schools	Medium Schools	Small Schools	Average
Use scenery	89.13%	67.07%	56.60%	66.66%
Made by students	47.82	24.34	34.90	33.76
Make costumes	58.69	65.85	61.32	62.39

Certain conclusions are justified by these answers. In the first place, painted scenery is used by two-thirds of the schools represented. The proportion of larger schools using scenery is greater than two-thirds, and the proportion of smaller schools is less. The mere matter of expense would lead one to expect this answer. In just about one-half of these schools, the scenery is made by the students. In the cases where painted scenery is used, but is not made by the students, the explanation is that the school owns a few sets which are used over and over again.

There are certain supply houses which make a practice of selling "standard sets" to schools, and the boards of education often buy them out of mistaken kindness. Some of the remarks of persons who filled in the answers are illuminating in this particular: one says, "Three sets have been provided by the board"; another asserts, "No. Students don't make their own scenery. Bought from supply house. $900"; while a third is still more unfortunate from the point of view of educational play production, "Have latest equipment, three sets of scenes."

It is an ancient, but not very commendable, tradition in the theater that any play can be played with a "parlor," a "kitchen," and an "exterior" or "wood." These are the three sets usually furnished for a stage. It is argued, with some degree of plausibility, that they go back to the distinctions set up by the Greeks, and trace their descent from the palace of Greek tragedy, the humble home of Greek comedy, and open-air scene of the Satyr-play. In spite of honorable ancestry, it is to be hoped that these three sets will disappear from schools, as they have already disappeared long since in all other places.

Costumes are more commonly made by the students than is scenery. The figures seem to show that this is more often the case in smaller schools than in larger ones. An obvious reason is that the larger schools are richer, and think that they are doing a better thing in hiring the costumes from professional costumers, while the smaller schools out of necessity make more of their own costumes.

The answers to the fourth question, as to who directed the work in costuming, is of little importance, possibly, except to show the divergence. The answers are shown in Table XVII:

TABLE XVII

Division of Responsibility for Work in Costuming

	Large Schools	Medium Schools	Small Schools	Total
Special subject teacher	14	19	23	56
Teacher of English	2	8	18	28
Teacher of another subject	1	3	9	13
Director	15	16	25	56
Combination	3	11	8	22

"Special subject teacher" refers to a teacher of domestic science, sewing, art, household arts, or some such subject. The classification, "Teacher of another subject," was intended to include teachers of common school subjects other than English; for instance, one reply said the "Teacher of Latin," two others stated that the costumes were made under the direction of the "Librarian." "Combination" means that more than one teacher was mentioned, most commonly the teacher of English and the teacher of domestic science. As a matter of fact, the "Director" is usually a teacher of English, too, so the figures would probably mean more if these two classifications were added together. Perhaps the only lesson that can be drawn from this tabulation is that teachers of English intending to do dramatic work should take a course in sewing.

Table XVIII shows how many schools have workshops in which this work in stagecraft is carried on:

TABLE XVIII

NUMBER AND PERCENTAGES OF SCHOOLS HAVING WORKSHOPS IN WHICH STAGECRAFT IS CARRIED ON

	Large Schools	Medium Schools	Small Schools	Total
Schools having shops	14	24	33	71
Percentages	30.43%	29.26%	31.13%	30.34%

These figures show that the proportion of schools possessing shops is very constant, and that that proportion is one to three. In most cases, the answer merely means that there are manual training shops or sewing rooms that are used. The case of a shop that is a real laboratory for play production is probably much more rare than these figures would indicate.

On the whole, the conclusion drawn from these figures seems to be that the opportunity to give students the experience that arises from designing and making scenery and costumes is being seized whole-heartedly in only a small percentage of schools, and probably few schools are so equipped that this work can be successfully undertaken even if there were a teacher to direct it.

STAGE LIGHTING IN THE SCHOOLS

The last section of the questionnaire deals with stage lighting. It falls into three parts: (1) whether or not the school possesses a system of stage lighting; (2) what standard units they have; and (3) whether or not they have a switchboard, or system of lighting control. The figures for the first part appear in Table XIX:

TABLE XIX

NUMBER AND PERCENTAGES OF SCHOOLS HAVING A SYSTEM OF STAGE LIGHTING

	Large Schools	Medium Schools	Small Schools	Total
Possess lighting system	45	71	58	174
Percentages	97.39%	86.58%	54.71%	71.60%

As would be expected, practically all the larger schools indicate that they have a system of stage lighting; in fact, only one large high school was without a system. The percentage of schools so supplied decreases directly with the size of the school, and only about one-half of the smaller schools have them. This question was difficult to understand, and perhaps it is not a very pertinent one. Several persons replied their schools had no lighting system, but then indicated that they had footlights, or some other lighting unit. As a matter of fact, a school with any lighting unit at all has a lighting system, bad as it may be. What was intended was to determine whether or not there was a plugging box, or a system of any sort for a centralized control. Probably most of the persons answering the questions so interpreted it.

The figures for the lighting units appear in Table XXA.

TABLE XXA

UNITS OF LIGHTING POSSESSED BY SCHOOLS

	Large Schools	Medium Schools	Small Schools	Total
Footlights	41	68	78	187
Border lights	37	53	37	127
Spotlights	28	33	29	90
Flood lights	23	22	19	64

A translation of these figures into percentages as shown in Table XXB will allow a comparison between the groups, and will show that in this, as in most other respects, the larger schools are better equipped.

TABLE XXB

Results of Reducing Figures of Table XXB to Percentages

	Large Schools	Medium Schools	Small Schools	Average
Footlights	89.13%	82.92%	73.58%	79.48%
Border lights	80.44	64.63	34.90	54.27
Spotlights	60.87	40.24	27.35	38.46
Flood lights	50.00	26.82	17.92	27.30

As is to be expected, footlights are the most common lighting unit, and border lights are second. The figures prove very little, however, even about these units, for it is necessary to know many other things in order to determine whether the foot and border lights are of real value to the production—such things as the number of lights to the foot, the size of the bulbs, the number of circuits, all tend to qualify the value. Border lights are a very primitive form, and are being used in good professional theaters only slightly in these days. If the border lights possess but one circuit, if they are permanently fastened in place, or if they are incorrectly hung, they are very nearly useless; and experience teaches that one or all of these faults is usually found in high school stages. For spotlights—and flood lights, too—the figures merely show the number of schools claiming to possess them. Most of the schools stated that they had only one spotlight, and often it was indicated that this was an old-fashioned one, placed in a balcony. For good stage lighting several spotlights are needed, and at least two floods; so it is to be feared that the actual situation in regard to good lighting equipment is not so favorable as the figures would indicate. It is doubtful if many schools have lighting systems that are really satisfactory.

The one essential to good stage lighting is a switchboard with dimmers, and in this respect—as might, alas, be expected—the schools prove to be badly equipped. A good switchboard is the brain, or nerve center, of a lighting system. It is difficult to ex-

plain its importance to a novice in stage lighting; but the making of light-changes on the stage, highly important as that is, is only a minor matter. It is only by the use of dimmers, controlling the amount of light in different units, that it is possible to get good effects. It enables light to be balanced against light, and accounts for all the subtle effects that the modern stage artist secures. In the truest sense, stage lighting can exist only where there is a good switchboard, and there can be no system without one. The figures for this important element appear in Table XXI:

TABLE XXI

NUMBER AND PERCENTAGES OF SCHOOLS WITH A SYSTEM OF LIGHTING WHICH INCLUDES A SWITCHBOARD

	Large Schools	Medium Schools	Small Schools	Total
Possess switchboards	23	22	15	60
Percentages	50.00%	26.82%	14.15%	25.64%

Even these figures are, I suspect, probably too high. It is to be feared that some of the persons filling in the answers did not take into account the words, "with dimmers," but credited themselves with good switchboards when they possess only very rudimentary ones. Then, too, one or two dimmers only do not make a good switchboard. But even accepting the figures at their face value, it appears that only one school in four is equipped to do even passable work in this field. When one considers the cleverness of the modern American boy in mechanical matters, his ability to manipulate the radio and the automobile, and all the other machines that he finds in his everyday life, one regrets that the school is missing a great opportunity in failing to link this ingenuity to the artistic effort that should be bounded by the term "educational play production."

SUMMARY AND CONCLUSIONS

Considering, then, that the distribution of this questionnaire is such that both large and small schools are represented, as well as all parts of the country, I feel that the following facts give an

accurate picture of the situation that exists in regard to educational play production.

1. The producing of plays in schools is practically universal, and 80 per cent of the authorities encourage it.

2. Although the proportion of worthless plays given is still too large, the production of good plays, or plays that are "good theater," is much more common today than used to be the case. On the whole, the situation is encouraging.

3. In two-thirds of the schools of the country, dramatic work is still entirely extra-curricular, and is not organized, as it should be, around a single producing group. Nevertheless, in a surprisingly large and growing number of schools, "play production" is being introduced as an accredited school subject.

4. More than half of the teachers engaged in producing plays have had some special training in the subject, and trained teachers are growing more numerous.

5. In three-fourths of our schools there is an auditorium designed to be used among other things for play production; and in the great majority of schools the work is so planned that this auditorium is available for rehearsals and other dramatic work.

6. The stages in these auditoriums vary greatly in size, but most of them are large enough for the purpose. However, the space is often so badly arranged, that it does not permit of overhead rigging and other equipment necessary for good play production.

7. Few schools have any real system for giving students the great artistic experience that arises from the craft side of play production; and probably few schools are sufficiently well-equipped, in the matter of tools and workrooms, for instance, to give this work, even though they have a trained teacher to do it.

8. Few schools—even at their own estimation, less than one in four—have the necessary light equipment to give students the opportunity to work in this most important element of modern play production.

The picture, then, is of a universal activity in play production which is becoming a new school subject. Authorities look on it with favor; and the students delight in it. For its proper growth as a tool of education it needs two things, properly trained teachers and a certain amount of equipment. The trained teachers are appearing, and are certain to appear more and more as the demand increases. With regard to equipment, the situation is

probably not so favorable. To a large extent the unfavorable situation in regard to equipment arises from its peculiar nature, for an important part of it is the building itself. A poorly planned stage, an incorrect proscenium arch, the lack of necessary space here or there, the permanent fixing to the walls of units that should be movable—any one of these things can do more to cripple play production in a school than a succession of ten bad teachers of the subject. The teachers can be dismissed, and will be, but the building itself stands there with a discouraging permanence. As Irving Pichel so well says:[4]

> Architectural ineptitudes are more likely to be perpetuated and in time condoned than those of any other art. Generally speaking, a bad painting is scrapped, poor music remains unpublished and unplayed (along with much good music, no doubt), and bad books, after a time, cease to be read. But a building is somehow inescapable.

And "architectural ineptitudes" in the form of school stages are being erected every day in the year. Not one in twenty—probably not one in one hundred—of the school stages built are arranged so that play production on them will be easy and successful. This situation is exceedingly discouraging to teachers of the subject, since it is entirely unnecessary. It may be argued that the school auditoriums are to be used for many things beside play production—for debates and oratory, for concerts, assemblies, and graduating exercises. But the fact is that a stage suitable for all these things may be entirely useless for play production, while a stage suitable for play production is just as useful for all these other things. Therefore, every school stage should be built primarily for play production—even though there is no immediate prospect of its being used for that purpose. Before the school buildings that are being built today are old enough to be abandoned, play production is likely to be an important part of every school program.

[4] Pichel, Irving, *Modern Theatres*, p. v.

PART III

DESIGNING AND EQUIPPING OF SCHOOL STAGES

DEFINITION OF THEATER

Modern play production is possible only in a modern theater. Although the word "theater," comes from a Greek word meaning "to see" or "to view," and originally a theater was merely a place for the display of a spectacle, in modern usage theater has come to mean a building that has two main parts: (1) an auditorium for the accommodation of an audience, and (2) a stage on which the play may be performed. These two parts of the building are separated by a wall, in which there is an opening through which the audience hears and sees the performance. This opening is called the "proscenium" opening, and it may be closed at will by a curtain. Schools not possessing a "theater" are not, therefore, equipped for play production. Figures show (see Table XIV) that one school out of every four has no proscenium arch, and in these schools, even if their auditoriums were suitable in every other particular, real play production would be impossible. Unfortunately, even where a proscenium arch is built, some other defect often cripples the "theater." Hence arises the questions: What constitutes a good theater? How can the suitability of a theater be judged?

TEST FOR A THEATER

The following questions help to solve the problem of what constitutes a satisfactory theater. With their aid it is a very simple matter to derive a scale on which any theater could be measured.

1. *Are its acoustic properties good?* Can the actors be easily heard in all parts of the house?

2. *Are the sight lines correct?* Sight lines are the lines of vision, and they may be represented on the floor plan of a theater by two lines from each seat, one to each side of the proscenium arch (Fig. 1). In the perfect theater, the sight lines from each and

every seat should include the entire stage. That is, every person in the audience should be able to see all the action, regardless of the part of the stage in which it is taking place.

3. *Does it make a pleasing æsthetic appeal?* Is it painted and decorated so as to be attractive? Is the auditorium the sort of room in which the audience will be in a frame of mind to enjoy a play? Is the lighting soft and pleasing, or harsh and glaring? Are the seats comfortable?

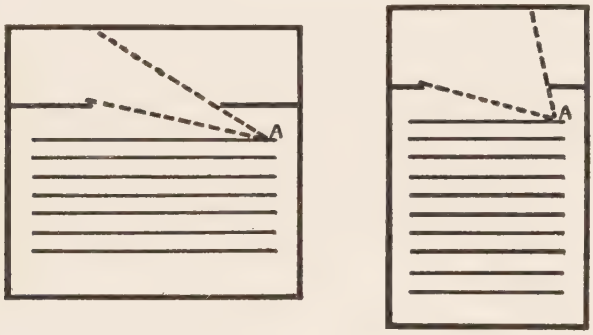

FIG. 1. SIGHT LINES

The auditorium shown on the left has bad sight lines. A person sitting at A can see less than one-half of the stage. The auditorium on the right is better.

4. *Are the hygienic conditions satisfactory?* Are there washrooms and sanitary facilities convenient to the auditorium? Is the auditorium satisfactorily ventilated? Is it correctly heated?

5. *Are the mechanical possibilities of the stage sufficient?* Is the stage sufficiently large so that there will be room on all sides for scenery? Is it high enough to allow the scenery to be pulled up out of the way? Has it storage rooms for properties and scenery? Has it modern appliances?

As will be noted, the first four questions apply mainly to the auditorium—the "house," in the language of the theater—while the last one is concerned with the stage itself.

PRINCIPLES OF AUDITORIUM DESIGNING

The principles that should govern the building of the auditorium itself are obvious and well understood, even though they are far from universally practised. As is indicated in the above

questions, they fall into four divisions: acoustics, sight lines, æsthetics, and hygienic conditions.

While acoustic properties cannot always be determined in advance, it is safe to say that any auditorium having large blank spaces on opposite walls will have bad acoustics. These spaces reflect the sound waves, and thus prolong them so that they overlap and cause an echo. It is therefore necessary to see that large wall spaces are broken by windows, recesses, or other architectural features. If the auditorium is already built, and bad acoustics need correcting, curtains may be hung or the walls and the ceiling may be covered with some material that will deaden the reflection. There are many suitable materials on the market, such as special plasters and wall boards. Hair felt is excellent for this purpose. People, of course, are the most effective means of deadening sound reflection. An audience absorbs the sound waves better than any other material, which explains why some halls, in which there is a very bad echo when no audience is present, have comparatively good acoustic properties when they are crowded. This is likely to be especially true if the floor is a hard surface, like wood or concrete. The covering of the floor with a carpet often has a very noticeable effect on the acoustic properties. It is usually possible to improve the acoustic properties of incorrectly built auditoriums, but planning in advance should make correction unnecessary.

On the other hand, it is very difficult to do much about bad sight lines. To remedy bad sight lines, it is possible to do something with the play itself: it can be directed so that most of the action is brought forward and to the center of the stage, so that it will be visible from all parts of the house, and the scene designers can make scenery that will aid in bringing the action forward into general vision. Sometimes, too, it is worth while to remove a few seats, or to rearrange them so that the sight lines will be improved. But not much can be done after the auditorium is built and the seats are installed. If there is a balcony, the sight lines from its seats must be considered, also, and elevation as well as width must be kept in mind. In a large auditorium recently built at Columbia University—the McMillin Academic Theater—the sight lines from the balcony are a perfect example of what should not be done. The pitch of the balcony is so slight that people in the second row can see the stage only by dodging around

the heads of the people in the first row, and from beyond the third row the stage is visible only to those who are standing. Even in the orchestra of this theater the sight lines are very bad for the stage is placed in the middle of one of the long sides of the auditorium, so that only about one-third of the seats face the stage directly; there are several hundred seats on each side which face the blank walls of the proscenium arch. It would not have cost a penny more to build this auditorium with perfect sight lines, but now there is nothing that can be done about it, except entirely to rebuild the auditorium.

Most high-school auditoriums in large buildings erected recently are very successful from the æsthetic point of view. Some exceedingly charming rooms have been built. Modern ideas of theater decoration have certainly improved, and the old, gaudy, over-ornate houses are no longer created. The proscenium arch in the school auditorium, as in the good modern theater, is today built simply, and finished with subdued and harmonious colors. If it is desired to outline it in some way, a plain dull black, or a dark finish of some sort, is much more suitable and artistic than the gilt ornate effect once so widely used. The proscenium curtain is part of the design and must be so considered. Of course, the lighting should be soft and pleasant. The ideal for an auditorium is the same as that for any other charming and comfortable room, for in the last analysis that is all an auditorium should be.

The need for hygienic considerations is perfectly obvious. The auditorium needs to be correctly heated and ventilated. Often it may be necessary to have all windows closed—for, of course, it should be possible to darken a good auditorium for performances in the daytime—so that there is a greater need for careful ventilation here than in other rooms. If a school auditorium is to be used for public performances, and it should always be assumed that such is the case, toilets should be placed so as to be easily accessible. There is usually no reason why the regular toilet facilities of the school cannot be made to serve, if the matter is thought of in advance and they are correctly placed.

The principles governing the construction of the other half of the school theater are not, perhaps, so generally understood. It is in respect to the stage that most schools are so seriously handicapped. The first thing to be considered is its size.

SIZE OF THE PROSCENIUM ARCH

It may be stated at the beginning that a stage can hardly be too big; it should always be as large as the plot of ground, or the school building in which it is to be placed, will allow. But a careful distinction must be made and kept in mind: a proscenium arch may be made too large to be practical. An arch that is seventy, or eighty, or ninety feet wide is certainly too large. The stage itself consists of all the space back of the proscenium wall, and there cannot be too much of this. Planning must always begin, then, with a consideration of the size of the opening, or the proscenium arch.

It is ardently to be hoped that there will be a proscenium arch in every school auditorium, and that no more school stages will be built that are nothing but bare platforms extending from one wall of the house. As has been before stated, a real stage, with a proscenium wall and opening, serves every possible purpose of the platform stage, and simplifies beyond measure the problem of school play production. This proscenium arch may be as simple as is desired—indeed, good taste dictates that it be kept so—and the building of it should add little, if any money, to the cost of construction.

The minimum practical size of a proscenium opening in a school is 15 feet in width and 8 feet in height—and this size is really too small for any but very tiny auditoriums. A larger opening is better, but in an opening smaller than this the actors, even though they are children, look huge and fantastical. If the proscenium opening is less than 8 feet in height, the gestures of the actors go up out of sight. In a space narrower than 15 feet, three or four persons side by side look cramped and crowded. Hence it is unwise to plan an arch smaller than 15 x 8 feet, and such a one is practical only for small plays containing few characters.

The maximum limit is probably 40 feet in width and 15 feet in height. In a bigger opening actors look dwarfed. Professional stages rarely use openings bigger than this. In some new school buildings, huge proscenium openings have been built, sometimes 70 or 80 feet in width. These make great and unnecessary problems for the play producers, especially when stages so built are only 10 or 12 feet deep, as is usually the case. If such large stages are needed for any purpose, for example, to hold a large graduating class at commencement exercises, it is possible to secure the

same amount of floor space by making the stage narrower and deeper.

In a book that should be studied by all architects designing school stages, *Modern Theaters*, Irving Pichel gives as a minimum for the proscenium opening 24 x 12 feet. I have found 30 x 15 feet to be an excellent size, and unless the auditorium is exceptionally large, or unless the production of huge musical comedies is planned, those dimensions will be found satisfactory.

NECESSITY FOR MOVABLE TEASER AND TORMENTORS

In any case, whatever the size of the proscenium opening, but especially when it is very large, it should be possible to cut down its size with a "teaser" and "tormentors." A teaser is usually a curtain hanging over the opening; and tormentors are two upright pieces, usually frames covered with canvas or some other material, one of which stands on each side of the opening (Fig. 2). Both teaser and tormentors should be movable. The teaser should never be fastened in a permanent way to the top of the arch, as it is in so many high school stages, so that it cannot be raised and lowered. Often it is desirable to cut down the height of the opening to 8 or 9 feet when a small interior set is to be used, such as a cabin, kitchen, or room in a poor home. The tormentors should make it possible to cut down the width to 18 or 20 feet. If teaser and tormentors are properly made, this change should be the matter of a few moments only. One of the first and most important of all principles in regard to stage equipment is that everything should be movable and flexible. The teaser should be hung on a pipe or wooden batten, and suspended from pulleys by two or three ropes—a "set of lines" in stage parlance.

BACK-STAGE SPACE

When the size of the proscenium opening has been determined, the next problem is the size and layout of the back-stage space. These dimensions would be those shown in the floor-plan of a building—those which are usually considered to bound what is popularly called the stage. As there can hardly be too much room back-stage, the problem is largely one of determining the minimum limits. The depth of the stage depends on the width of opening. The stage should have the proportions of a generously large room, and 18 or 20 feet is a normal depth for a 25- to 30-foot

opening. A good rule is that the minimum depth should be about two-thirds of the width of the arch. There is no objection to making the stage much deeper than this minimum.

On each side of the proscenium arch there should be space for actors and for the storage of properties and scenery. Six feet is probably a minimum, and this is what has been shown in Figure 2. More room would be better, and 10, or even 20 feet, would not

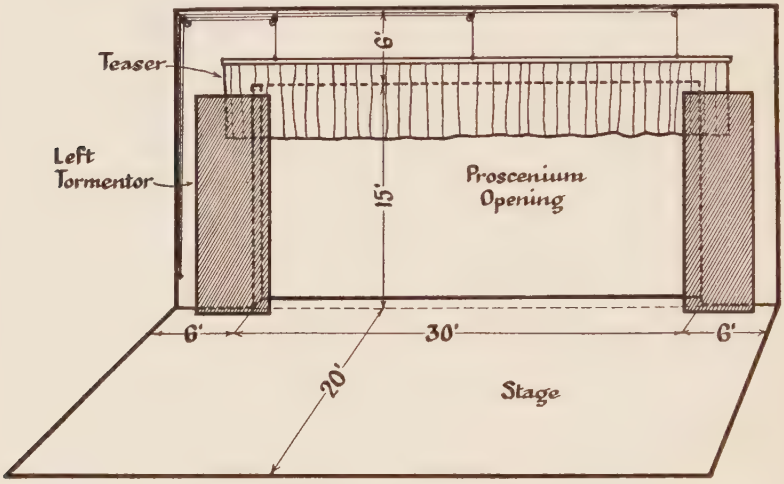

FIG. 2. A STAGE OF CORRECT PROPORTIONS WITH MINIMUM OFF-STAGE SPACE

Notice the movable teaser and tormentors. This stage may be made any size by changing all the dimensions proportionally. More off-stage space would be useful if the construction of the building would allow it; 10 or 12 feet might well be allowed at the top and sides of the proscenium opening instead of six.

be too much. Pichel argues that the spaces to the right and left of the proscenium arch should equal the center space within the arch. That is, if the opening is 30 feet wide, there should be a 30-foot space to each side, making the total width of the stage itself 90 feet. This is probably the counsel of perfection. For practical purposes 10 or 12 feet is sufficient.

School architects have an annoying custom of spoiling the stage by putting in extra walls, and creating on the stage floor dressing rooms or storage space, thus cutting down what would otherwise be a very useful stage. Figure 3 shows three very good—or rather, bad—examples of this practice. They are all taken from

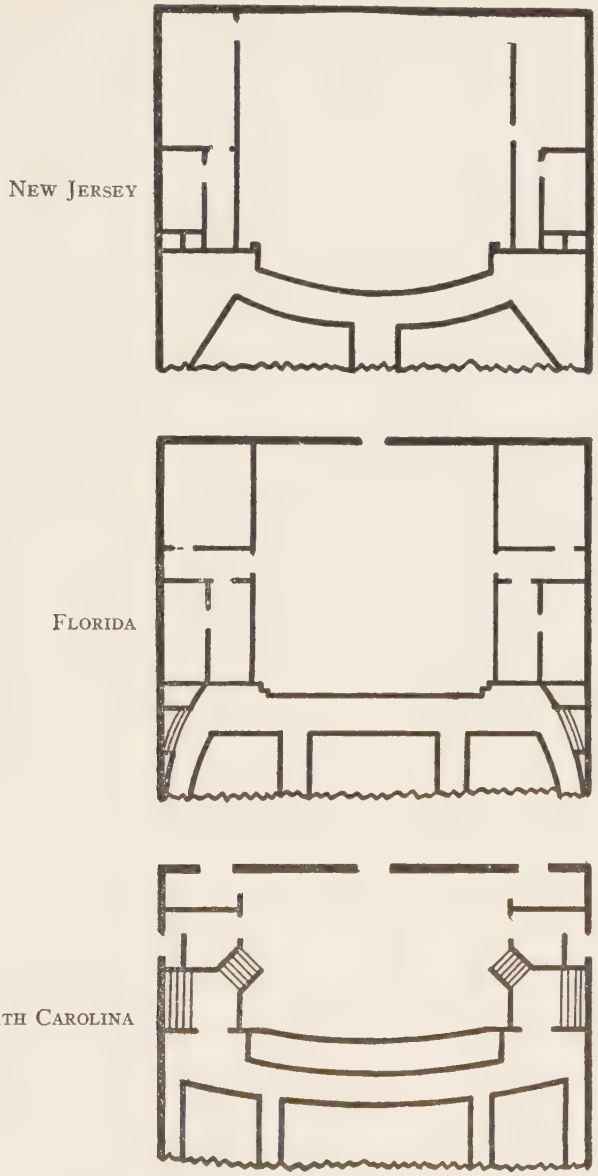

Fig. 3. How High School Stages Should Not Be Built

plans, presumably commended, in *The American School and University for 1928.* In each of these three cases, the auditorium is admirable, and the stages would be models in regard to size and spacing, except that they are spoiled by the creating of unnecessary rooms on the stage—and in the last case by the intrusion of stairs. In that entire volume, I am able to find but one plan for a stage in which the stage seems to be designed with the idea of giving all the space possible. This is in the Highland Junior High School of Louisville, Ky., designed by J. Meyrick Colley; and even in this design there are two pairs of stairs and a door in the back wall that will be sources of constant annoyance. The principle is that there should be as much room back-stage as can conveniently be allowed, and to this end, no unnecessary walls must be put in. Students can dress, if necessary, in the cellar, or in classrooms, or behind screens. If the stage is to be useful it must not be spoiled by being reduced to a mere box, only a foot or two wider than the proscenium opening.

This back-stage space need not be symmetrical. If it is more convenient, the greater part of it may be on one side. This side with the largest space is called the *working side* in the professional theater, and here may be stored the extra scenery, properties, etc. However, the wall on the short side should be at least six feet from the edge of the proscenium arch, as otherwise it is impossible to have doors on that side of the stage sets. A large space at even one side of the stage is often very useful, as it may aid in making the stage a more suitable place for the conduct of classes in stagecraft and other theater arts.

OVERHEAD SPACE

The one dimension that remains to be considered is the height of the stage from floor to ceiling. In the modern theater much scenery is "flied," that is, hauled up into the space over the stage above the line of vision of the spectators. This implies that there be as much space above the top of the proscenium arch as there is below, plus whatever space is needed so that scenery hung in the flies will really be above the line of vision (Fig. 4). Most recent theaters have twice as much space above the top of the proscenium arch as there is below it. This means that the distance from the floor of the stage to the roof is three times the height of the proscenium opening.

Here, again, I feel that this is the counsel of perfection. The building of a stage with such a large space overhead creates a tremendous problem for the architect. This huge shaft must be in some way surrounded or it is the most conspicuous, and usually

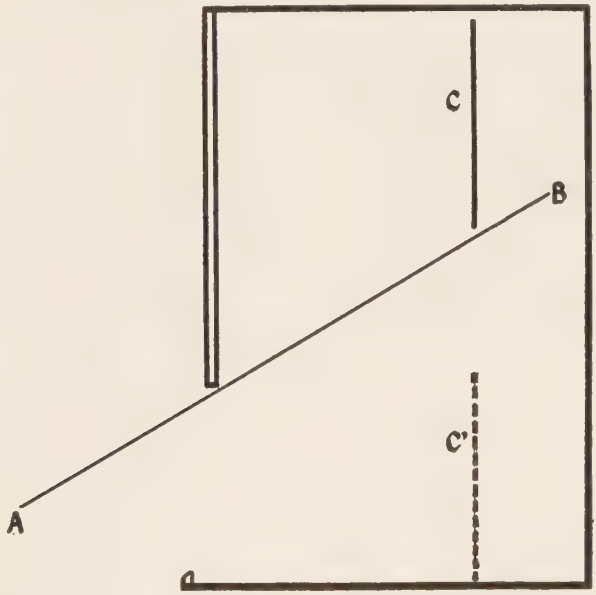

FIG. 4. SIGHT LINES FOR OVERHEAD SPACE

C is a suspended drop, which, when it is lowered to be used, would take the position of C′. A–B is the sight line which should clear the bottom of C when drawn from any seat in the house.

the ugliest, part of the exterior of the building. Few schools will have either the money or the space available for such construction. And, fortunately, it is not absolutely necessary. But it is necessary to have some overhead space. I believe 6 feet (Fig. 2) is the absolute minimum, and 10 or 12 feet would be much better. The rule should be to allow as much overhead space as the situation makes possible, but never to let the ceiling of the stage be a mere foot or two above the top of the proscenium arch. If there can be as much space above the top of the arch as there is below, or even a little more, so much the better: the theater will be a nearer approach to the ideal.

SUMMARY OF DIMENSIONS

The dimensions required for a practical school stage may be summarized as follows:

Proscenium arch at least 25 feet wide, and if possible between 30 and 40 feet; at least 12 feet in height, and as much more than that as the height and size of the auditorium demands from the viewpoint of good design; but always equipped with a movable teaser to cut down the opening so that scenery of a reasonable height—12 or 14 feet—can be used.

Width of stage at least 6 feet on each side more than the width of the proscenium opening, and more than that—on one side at least —if the building will allow it.

Depth of stage at least two-thirds of the width of the arch, and as much more as is feasible.

Distance from floor of stage to ceiling at the very least 6 feet more than the height of the proscenium opening, and as much more than this as is possible, up to three times the height of the arch.

The following table, suggested by Claude B. Hagen, construction engineer for the Century Theater, and quoted by Pichel, shows what is common practice in building professional theaters.[1] It is based on the *rule of seven*, that is, all the dimensions are multiples of seven. With the possible exception of the height of the loft—that is, stage floor to ceiling—there is no reason why school stages should not be designed according to such specifications.

Proscenium width	28	35	42
Proscenium height	21	28	35
Width of stage	42	56	70
Depth of stage	21	28	35 or more
Height to loft	56	63	70 or more

The one thing that must again be emphasized in regard to these dimensions is that they are for free space. Dressing rooms, property rooms, toilets, or any other rooms planned to be on the stage floor, must be outside these dimensions. If necessary, all these rooms may be omitted entirely. It does no good to start with a stage of generous size and then cut down with permanent walls to a mere box—which has been the fate of most school stages in

[1] Pichel, *Modern Theatres*, p. 31. I have omitted, in the table, Mr. Hagen's dimensions of fly galleries, cellars, and border lights, which will be discussed later.

the past. The essential element for play production, in both the school and the professional theater, is working space on the floor of the stage itself.

GYMNASIUM-STAGE

Sometimes auditoriums are built with a combination gymnasium and stage.[2] In general this scheme is not very practical, but, if it seems necessary to make the combination, the stage can be made possible for play production. The necessarily large proscenium opening must be equipped with teasers and tormentors so that it can be cut down to a convenient size. Overhead rigging (or beams to support it) should be supplied (see below); and lights and other necessary equipment can be of a movable variety, so they can be taken down when the stage becomes a gymnasium, or put up when the gymnasium becomes a stage. The gymnasium will become a stage useful for play production to the degree that it can be made to conform to the principles of good stage design.

RIGGING

In the modern theater, the most important piece of machinery for the "flying" of scenery is the *gridiron*. It is usually an elaborate grating or rack of steel, fastened above the floor of the stage at the top of the overhead space, about 6 feet from the stage ceiling. Men who are working on scenery may walk around on top of the gridiron, and blocks and pulleys may be fastened to any part of it. Three (or more) pulleys fastened to the "grid" at equal distances from each other, and in a line parallel to the proscenium wall, make it possible to support a drop of any length. The ropes that go from the top of the drop—or whatever scenery is being "flied"—should all be turned in the same direction, run through a multiple pulley, and down toward the floor to some place where they can be tied (Fig. 5). A set of pulleys and ropes so arranged that they hold a drop is called a *set of lines*. All three ropes of one "set" are handled as one rope. The ropes are stout manilla, never less than one-half inch, and larger if the "grid" is high or the scenery to be handled is unusually heavy. Sometimes the pulleys are fastened underneath the "grid," but if the scenery is heavy they may tear loose, so that the safest method—

[2] Several examples may be found in *The Architectural Forum*, Vol. XLVIII, No. 3, pp. 317, 319, 320, and 374, March, 1928.

and the one now most common in theaters—is to have pulleys that ride the beams in the "grid." Some theaters have more than three lines to a set, five being not uncommon. The extra ropes are merely for the purpose of helping to distribute the weight and making it easier to keep the drops level. The more sets of lines a theater has, the easier it is to handle lights, drops, and other units

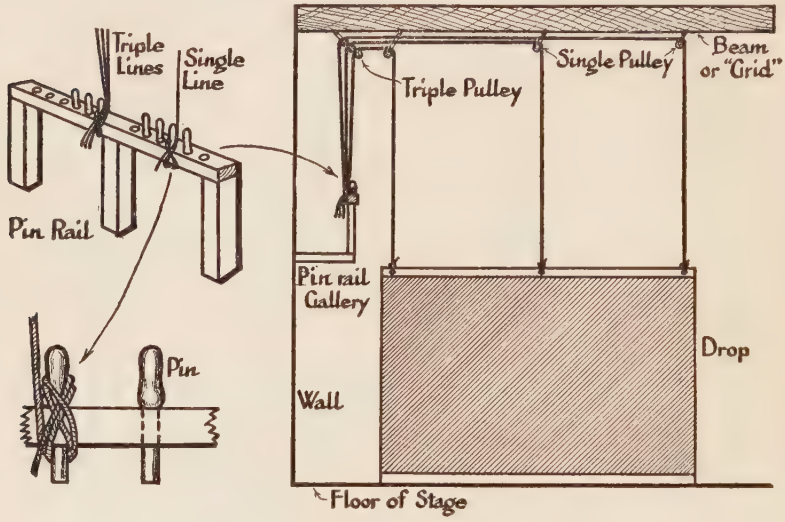

FIG. 5. A STAGE WITH DROP ON LINES

There is sufficient height over the drop so that it can be "flied" out of sight. The pinrail is shown on a gallery, but it may often be placed on the floor (see Fig. 6).

of scenery that are to be hung in the flies. A good professional theater has at least twenty-five sets of lines, and it may have forty or more.

The lines are handled from a *pinrail*, a stout railing containing belaying pins around which the ropes may be tied. The entire system is similar to that on a ship, from which, indeed, it has been developed. In some theaters the pinrail is on a raised gallery, built out from one of the side walls of the stage (Fig. 5). This has the advantages of keeping the stage floor clear of ropes, leaving the side walls free for the stacking of scenery under the gallery, and making in the gallery a valuable vantage point from which to

cast light on the stage. In smaller theaters, the pinrail is usually built against one wall (Fig. 6). A pinrail on the floor is easier of access, and saves labor in that the man or men who handle the ropes can help in other ways in shifting the scenery, which is difficult if they are in a gallery. The newest theaters have elaborate counterweight systems, or even motors to move the lines, so that

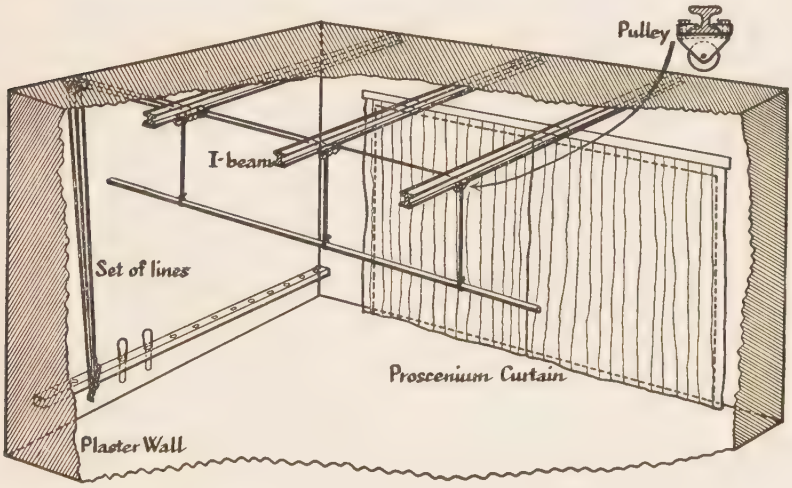

Fig. 6. I-Beams Correctly Set in the Stage Ceiling

The pipe suspended from the lines may be used for drops and other scenery, or for lighting units. The pulleys are merely clamped to the beams and may be moved forward or back to any part of the beams. There should be several sets of pulleys. The back wall, roughly plastered, makes an excellent sky.

one man can control and move the heaviest piece. Even where the old manual system is used it is always possible to counterweight heavy units by tying sandbags to a set of lines, so that the sheer lift need never be excessive.

Some overhead rigging can always be planned in school theaters, although it is usually impossible to have a real "grid," or to have an elaborate arrangement, and indeed it is not necessary. Even the smallest theater should have something that serves for a "grid," though it be only a heavy beam or two solidly fastened to the ceiling. If necessary a framework of wood or piping can be supported from the floor of the stage. If there is not sufficient overhead room so that drops may be hauled up out of sight, it is only

necessary to lower the drop and unfasten the lines. The drop can be rolled up and thus disposed of, while the lines can be pulled up until they are to be used again. The important thing is that the ceiling of the school stage should never be a mere plastered plane, which is now usually the case; it should have some devices for holding pulleys and sets of lines, some sort of gridiron, however rudimentary. Often this may be very simply made by leaving the beams in the ceiling exposed; or, if they are not in themselves suitable, by fastening small I-beams at right angles to the proscenium arch, as shown in Figure 6. Three or four sets of lines and pulleys so arranged will often be sufficient in the school theater. The pulleys may be moved backward and forward on the I-beams, and fastened at different times at whatever spot they will be most useful. Thus, they will serve the purposes of many fixed sets of lines. In rigging, as in all other elements, flexibility will allow units to be used again and again in different places and in different ways. Underslung pulleys of this sort must be carefully fastened; and the lips, bolts, and nuts by which they are attached to the beams should be of the best tested steel. But if they are of a good quality, carefully used, there is little or no danger of their failing to hold any weight to which they are likely to be subjected in the course of ordinary play production. All overhead rigging, including ropes, must be frequently inspected to see that there are no weaknesses from wearing.

FINISHING STAGE WALLS

The walls of the stage should be left bare and plain—not "finished" at all. As has been pointed out above, it is highly desirable to leave construction work exposed in the ceiling. The same is often true of the side walls. It is exceedingly useful in placing lights, pulleys, and other equipment.

The one wall that is useful if finished in the right way is the back wall. If this back wall is plastered roughly, it makes a beautiful sky when properly lighted. A plaster sky wall is highly desirable for all exterior scenes. It may be painted a broken-color blue,[3] but even this is entirely unnecessary. In one small theater I have been using an unpainted wall for two years, and it has been so successful that I have given up all idea of ever painting it. Plaster is infinitely superior to canvas for creating a

[3] Smith, *The Book of Play Production*, pp. 111 and 142.

sky illusion. It is not sensitive to climatic changes, and it simulates infinite depth much better because its granular surface catches the light and breaks it up into a more vibrant and diffused medium.

It is still better if the ends can be rounded (Fig. 7), and the sky extended at each side towards the proscenium arch. This makes a sky cyclorama, inside of which all sets are put up. It is convenient even for interior sets which show the sky or a landscape through a door or window. The using of the back wall in this

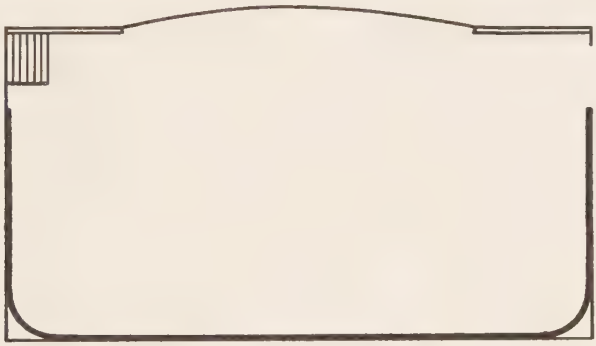

FIG. 7. STAGE WITH A SKY WALL

The stairs, if any are needed, and the door should be at the front, close to the proscenium wall.

way makes it necessary that it should be unbroken by doors or windows; therefore all necessary openings must be placed as far front on the stage as possible, up against the proscenium wall.

The least commendable way in which to finish the walls of the school stage is with elaborate paneling, wainscoting and ornamenting, and with architectural details. Unfortunately, this seems at present to be the universal custom. If, as is highly recommended, the walls are left more or less unfinished, it is necessary to plan a method to make the stage suitable for concerts, assemblies, and other non-play production activities. Two good methods are available: (1) a good set of scenery may be provided, showing an attractive interior of a room, which may, if desired, match in finish and tone the finish of the auditorium itself, or (2) an attractive cyclorama of curtains may be used. In either case, if the set is properly made and the cyclorama properly hung

(Fig. 8), it should be a matter of a few moments' work to strike the set or the cyclorama, and so make the stage ready and suitable for real play production. And of course, conversely, it is a simple

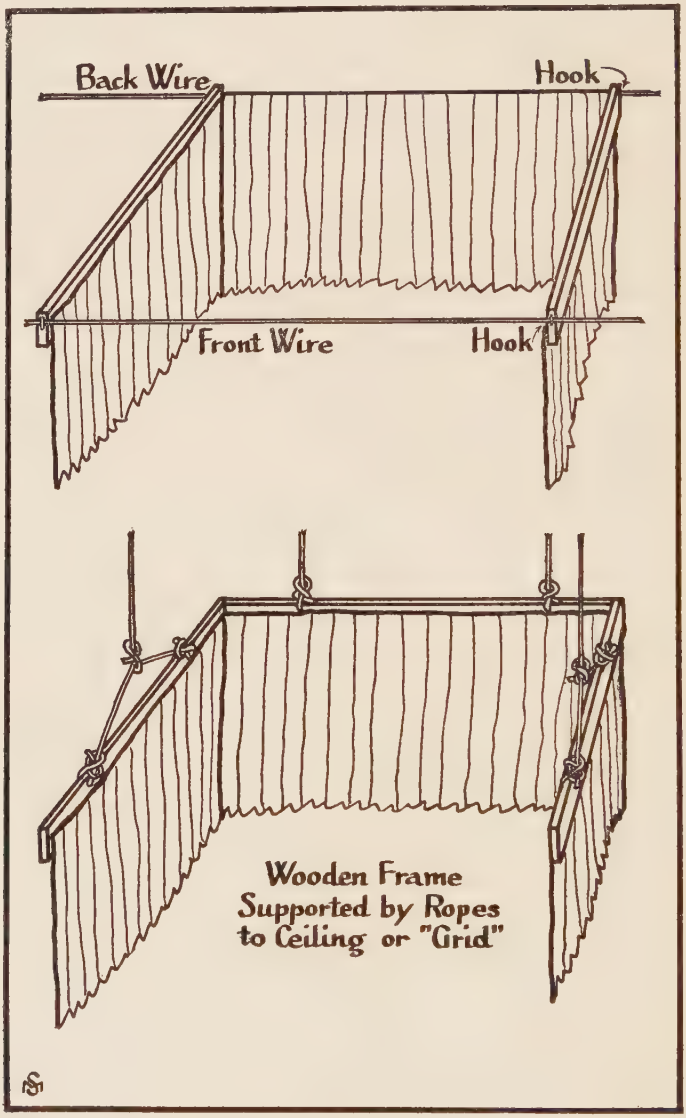

Fig. 8. Methods of Hanging Draperies

task to transform the empty stage into an attractive room suitable for assemblies or other exercises.

STAGE FLOOR

The floor of a stage is part of the machine, and in a professional theater it is always built of soft wood. A hardwood floor is a tremendous nuisance, as stage pegs cannot be driven into it without great difficulty. It is often necessary to drive nails into it, too. Therefore, in the good school theater, the floor will be of soft wood, except for the very front and the *apron*, the part which extends in front of the curtain. In a professional theater, it is sometimes necessary to replace the floor, but a softwood floor in a school theater will last many years.

In most modern professional theaters much of the stage is *trapped*, that is, it really consists of a series of trapdoors each resting on a frame of heavy beams. Thus, it is possible at almost any place in the stage to make an opening into the cellar. Stage designers may take advantage of this, and by having stairs lead up from the cellar they make the scene appear to be on the second story of a house. Probably such an elaborate system is unnecessary in the school theater, but it is often useful to have one or two traps in the floor, and if it is possible to have them they might well be allowed. Such traps are useful not only in designing the sets, but they allow scenery and properties to be passed up from the cellar. It is always useful to have a basement or a room under the stage if the construction of the building will allow it; but if choice must be made between space under the stage and over it, the overhead space is always more necessary and desirable.

Stage floors are always covered with a canvas cloth of some sort, called a *ground cloth*. It should be merely a large carpet of dark brown canvas, with webbing around the edges, which may be tacked to the floor. The ground cloth should not cover the entire stage space, but merely the acting space, or the space back of the proscenium arch. Many devices have been tried for fastening down the ground cloth, but nothing has been discovered as simple and effective as tacking. It has the objection that in time the edges of the ground cloth wear out. But a good ground cloth will last many years in a school theater, as it need be moved very seldom—probably only when scenery is actually being built on the floor of the theater, or when it is necessary to use the traps. The

ground cloth finishes the softwood floor, the set being placed on top of it. Every school stage, of whatever size, should be equipped with one.

OPENINGS IN THE STAGE WALLS

Openings in the stage walls should be as few as possible. Windows are entirely unnecessary, and doors may often be reduced to two, or even one. If there are many doors, especially in a small theater, it is difficult to find space for the stacking of scenery and property against the walls without blocking them. It is convenient to have one large door giving access to a street, so that scenery, properties, lumber, and all the other necessary material can be moved into the theater with a minimum of effort. The shorter the necessary carry, that is, the nearer trucks can drive to this door, the better. This large door, however, is not absolutely necessary. Scenery, furniture, and other properties can always be brought in through the auditorium and up on the stage over the footlights. If it is a choice, therefore, between breaking the wall of the stage at some conspicuous or inconvenient place, and leaving out the big door, it is much better to omit the door. There must, of course, be at least one small door for allowing people to get back-stage, and it is better if there are two, one at each side. As has been before stated, they should be as far forward as possible in a small stage when it is planned to make a plaster sky cyclorama. These doors should lead to corridors, if possible, and not directly to the auditorium itself. It is always inconvenient if actors, stage hands, and other back-stage workers can reach the stage only through the auditorium.

Often an economy of openings can be brought about by making a door within a door—that is, a small door for people may be built in a large door. The latter need be opened only when scenery or large objects are to be carried onto the stage (Fig. 9). This scheme automatically reduces the number of openings, an essential factor in designing the school stage.

DRESSING ROOMS

Dressing rooms are desirable in the school theater, but, as has been before stated, they should not be provided at the expense of the stage space. Aside from the fact that they take up space on the floor of the stage, there are other reasons why they are un-

desirable there. The slamming of doors, the sound of voices, and other noises are almost inevitable. The inopportune opening of a dressing-room door may let a beam of light onto the stage which

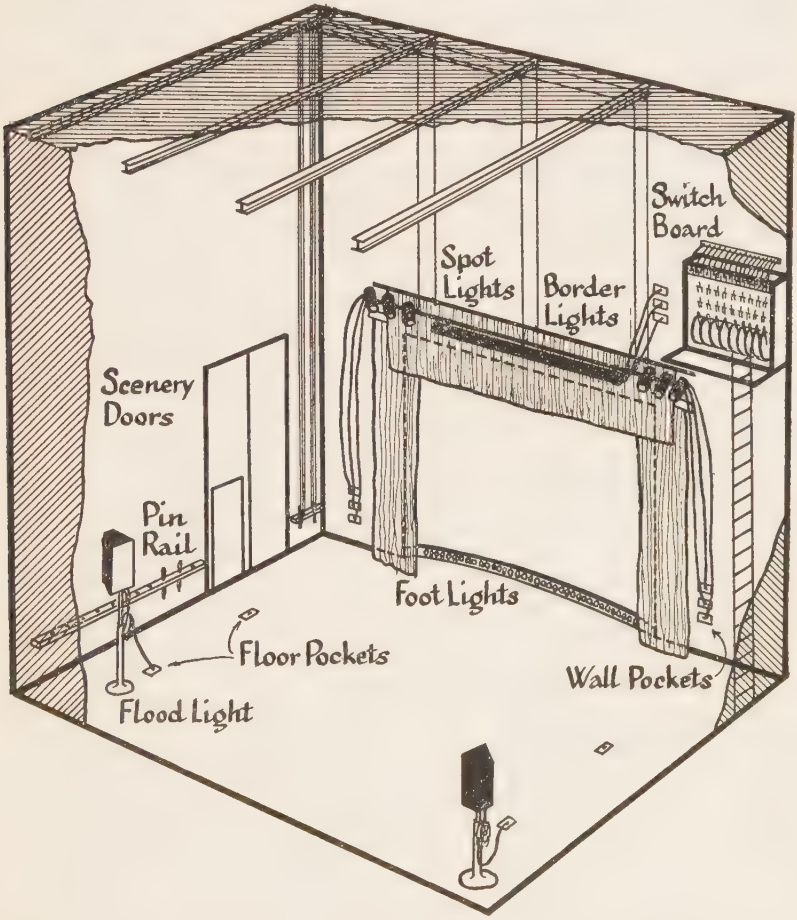

Fig. 9. Stage Suitable for High School Play Production Showing Necessary Lights Correctly Arranged

will spoil the entire lighting effect of a scene. For these reasons, even in the professional theater, it is not so customary as it once was to build dressing rooms directly off the stage floor, or to range them from galleries above the stage.

A real dressing room should have a long shelf or a narrow table

along one wall about 30 inches from the floor. It is convenient if there is a drawer under the shelf to contain the make-up, and if there is a closet or wardrobe in which costumes may be hung. Above the shelf there should be a good mirror with lights placed at each side, so that they will illuminate the face of the actor as he makes himself up. Hot and cold running water is very desirable, and a shower bath is a very comforting accessory.

Probably rarely in the school theater can space be spared for these ideal dressing rooms. They are not absolutely necessary, of course. Classrooms, laboratories, or any available rooms may be used. These rooms are most useful if they lead directly off the corridor which leads to the stage. If this corridor leads to the school toilets and shower baths, so much the better. There seems to be no reason why there might not be small closets in available classrooms, equipped with make-up mirrors, shelves, and lights, and with hooks arranged for costumes. These closets need take but little space, as they do not require outside windows, for make-up should always be done by artificial light. In this way, any well-placed room may be turned into a dressing room.

GREEN ROOM

A *green room* is an ancient and honorable theater tradition, not so common as it once was in this country, but slowly regaining favor. It is a comfortable lounging room, near the stage, but cut off from it so that actors waiting to be called for appearances can indulge in talk, reading, cards, and so forth, while they are waiting. An institution of this sort in the school theater is a tremendous convenience: it keeps the actors off the stage and out of the way, it enables the director to send to some definite place for actors, and it makes for fellowship and comfort in the cast. Here, again, there is no reason why some conveniently placed classroom cannot be used for this purpose. It is better, of course, if it can be furnished with comfortable chairs, with pictures, and with books and periodicals relating to the theater. In fact, it is the sort of room that would be ideal for the teaching of English, if there were such an ideal room anywhere. It would be an excellent club room for a dramatic association. The walls might contain old programs, pictures of past performances and graduated actors, and other interesting items. It is a simple matter, with some such scheme as this, to build up an air of great and respect-

able antiquity in a very few years, to establish a dramatic tradition in a school. Even a corridor may be used as a *green room.* But in every good school theater there should be some space available for this purpose, no matter what else the space must be used for when it is not a *green room.*

WORKROOMS AND STOREROOMS

The ideal number of workrooms in a theater is two for each department, one of which would be a combination shop and office, the other a storage room. As there are at least four separate stage departments—scenery, property, electrical, and costume—there would be eight required rooms. In the school theater, it is fortunate if there is even one room which all these departments can share.

Obviously, the manual training shop and the sewing laboratory first come to mind as available places for the making of scenery and costumes. If the teachers of these subjects are interested in stagecraft, they can, of course, be extremely helpful in making it a worth while subject. But the press of other things—and their ignorance of stagecraft—often makes it necessary to do dramatic work independently of them. In any case, however, in a well-planned school, it is desirable to have doors in the manual training shop of sufficient size so that scenery and other large objects can easily be moved in and out. Also, the shop should be near the stage. For the making of scenery, however, the manual training shop is often impossible to use. Scenery demands a large floor space, unencumbered with benches or permanent features. Some other large room, then, that can be used as a shop is highly desirable. Two rooms are better: a large one for the making of scenery, properties, and electrical effects; and a small one for the making and storing of costumes.

To be really useful, the large shop should be at least 20 by 30 feet, and 15 feet high, so that scenery can be stood on end in it. The fact that daylight is not necessary may make it easier to plan for this room, as space may be used for it that is not suitable for much else. All scene painting may be done by artificial light. If possible, this shop should have plenty of electrical outlets, so it can be lighted with regular stage lights; it should have running water; it should have gas for the heating of glue and paint. Aside from these, there are no other requirements. Like the stage it-

self, it may be left entirely unfinished. If it is to be used by the people who make scenery, properties, and lighting effects, it is useful to have three large closets, so that members of each of these departments may lock up their own tools and properties. But even these closets are not necessary. The one thing really essential is space. The cellar under the stage is a logical place for a stagecraft shop, and it is often devoted to this purpose in professional theaters. There is one great objection to this practice, however: if it is planned to have rehearsals at the same time that scenery is being built, workers under a stage are likely to make so much noise that the rehearsal is conducted only under difficulties.

Scenery may, as a matter of fact, be built anywhere—on the stage of the theater itself, in any vacant corner of the basement, in a large corridor, or even, weather permitting, out-of-doors. Very few tools and no machinery are needed. But it is much easier if some space in the building is assigned to it. And if some large room, or some part of the basement, can be fitted with running water, gas, electric lights, and a closet in which plans and tools can be locked up, stagecraft may be made a pleasant and profitable part of educational play production.

Many of the older theaters, especially theaters presenting repertory, had a *scene dock*—that is, a storeroom for scenery, usually merely a large room just off the stage. In it could be stored sets that were being constantly used. It is to be hoped, however, that school theaters will never accumulate a large store of ready-made sets, not even home-made ones. Each play is a new problem in design, and new scenery should be made for it. This scenery need not, of course, always contain new material. But old sets may be constantly rebuilt and repainted to suit new designs. Consequently a place in which to store them is needed. A small scene dock, then, even if it is only a large closet, will be useful. To be of any use it needs to be probably 12 x 12 feet, and there must be a door, at least 15 feet high, so that the scenery can be moved in an upright position, on edge, and stacked. However, a scene dock is one of the last things needed by a school theater. Scenery can be stacked in the workroom, in any vacant corner, or, if necessary on the stage itself. It takes but very little room. And, as has been stated above, but very few sets will probably ever be on hand at one time, because each set, soon after it is used, will be rebuilt into another set for a new play.

IMPORTANCE AND PRINCIPLES OF GOOD STAGE LIGHTING

The importance of lighting in the modern theater is only beginning to be realized. Historically, it was the last element to develop in the theater, and it is only since electricity has come to be such a common factor in everyday life that we have been able to master the art of stage lighting. Pichel states the situation when he says:

> After all, most of our machinery of the theater is of the simplest type—ropes and pulleys and simple bracing. In a double sense, the electrical equipment is approached with more awe. While most people know a little about the simpler laws of mechanics, electricity, guarded by an element of danger, is a matter too recondite to be brought into the fold of everyday information out of mere curiosity, or to be reasoned out, as the childish working of a pulley can be figured out by common sense; it has to be studied and learned. And besides being outside of common matter-of-fact, light is mystery itself, unplumbed nature, a fraction of the inscrutable life of the world led by strings to the stage. If the little playhouse is without any mechanical convenience, if its stage is cramped and mean, it can still achieve visual beauty through light. This force brings into the playhouse the most vibrant, subtle and affecting gift of the physical world, barring only the human presence.[4]

This text might be enlarged upon, but it is to be hoped that every person connected in any way with the equipment of school stages will convince himself of the importance of this glorious element and provide for the proper use of stage lighting in his school theater. In spite of its complexities and mysteries, a simple but effective lighting system is possible on every school stage.

The principle that is the base of all good stage construction—that the entire equipment should be flexible—is very essential also in regard to lighting. If this principle is followed, one light may serve many purposes and thus fewer units are needed. Three or four spotlights and flood lights, which may be moved around, are of more use than the most elaborate system of fixed lights, which will probably be used only occasionally. For one play these spots and floods may be hung overhead on battens slung from the "grid," or they may be fastened to the top of the proscenium arch and so throw light down on the stage; for the next play, they may be used on stands to throw light through doors or windows in the sets. Or again, they may be placed on the floor behind groundrows to cast light up on a drop. Herein is the entire secret of good and cheap stage lighting. The worth of the lighting equip-

[4] Pichel, *Modern Theatres*, p. 64.

ment of a stage, therefore, cannot be judged merely by the number of units it contains. A few units and a few dimmers, which allow the amount of light in each unit to be varied, are much more valuable than many fixed units without dimmers.

LIGHT UNITS

The equipment shown in the sketch (Fig. 9) is an inexpensive and flexible one, and will usually prove sufficient for all needs on a small stage. Perhaps the sketch requires a little explanation.

The first problem that comes up when lighting equipment is being discussed is usually footlights. Should footlights be installed in a theater or not? In my opinion no stage should ever be built without footlights. A few years ago this subject was much debated, and many Little Theaters were built without them. It was argued that they too definitely cut the actors off from the audience, that they threw light from an abnormal angle, and that they lighted the chins of the actors, the underside of tables and other furniture, and such other surfaces rarely lighted in nature. But none of these arguments are against footlights that are being used properly. They should never be the dominant light in a scene. Dimmed to a proper intensity they help give the dim, general, even lighting that must be the basis of all good stage light effects. In the Little Theaters and in professional theaters, footlights are again universally used. When the school stage is built, if no money is available for footlights or lighting equipment of any kind, it is well to build a trough at the front of the stage in which strip lights can be placed when they can be secured later. This device also has the advantage of allowing the footlights, as well as the other units, to be used in other places. When footlights are not needed, the strips can be removed and used elsewhere. They will be useful in many ways —sometimes on the floor to light drops or cycloramas, sometimes standing on end to cast light through doors or windows.

Footlights need never extend all the way across the proscenium opening, as the lights on the last few feet at either end merely light up the proscenium arch or the curtain, which should be in darkness. That is, in a 30-foot opening, footlights need not cover more than 24 feet. Thus, three 8-foot strips, placed end to end, will be highly satisfactory. They are best if the lights are arranged in three circuits, each wired for a third of the wattage,

that is, each controlling every third socket. Common color combinations are red, white, and blue; pink, amber, and blue; amber, white, and green; etc. The most modern footlights are all white, with holders so that gelatines of different colors can be inserted to give the desired combinations. This is not really necessary in a school stage, however, nor need the architect or designer concern himself with the color combinations of the footlights. It is enough if he provides three circuits. With the use of any variety of the numerous color preparations now made, any boy or girl can dip bulbs and make them any desired color. And, if the first combination is not right, or if for some particular play a special combination is desired, it is simple matter to wash off the first dye with alcohol, and make the same bulbs a new color.

For a small stage 40-watt bulbs are sufficient. Strips are commonly made with four bulbs to the foot, but three bulbs to the foot are satisfactory, or even two. If there are four to the foot, and this is best, the total number of lights in 24 feet would be ninety-six. If these bulbs are 40 watts each, the total wattage of the footlights would be 3,440. If they are in three circuits, as they should be, each circuit may lead through a 1,200-watt dimmer.

The second problem that occurs is in regard to border lights. They are strips of bulbs hanging over the stage parallel to the footlights, and casting light down upon the stage. The old custom was to supply the stage with at least three sets of these border lights, and some of the larger theaters had four or five sets. Often schools have footlights and two or three rows of fixed border lights. But modern practice in the theater discards border lights almost entirely, except for one row at the front of the stage. This row is close to the proscenium arch, and just above the top of it. This front border light is often called a *concert border*. In the sketch it is shown hanging on a pipe suspended from the "grid," so that it can be raised or lowered at will. This is the only border light that the well-equipped school stage needs—in general, other borders are entirely unnecessary and, in fact, undesirable. The concert border may consist of two 8-foot strips of bulbs, end to end, similar to the footlights described above. This would add a wattage of 2,560 to that previously specified. Better than the plain strip lights are the border lights made up of flood units, or those called "X-ray border,"

which have corrugated reflectors so that the light is broken up and diffused better. These are all wired for fewer but larger bulbs, whose wattage is 200 or 300 each, or more. Thus, a good border light might contain only nine bulbs, each being a 300-watt bulb in a separate compartment equipped with reflector and frames for holding gelatines. The total wattage of this border would be 2,700 watts. Whatever sort of a concert border is to be used, from 2,500 to 3,000 watts would be a generous estimate for this unit.

The sketch shows six spot lights, hung on the front pipe over the proscenium arch. The well-equipped professional theater may use forty, or fifty, or more, spotlights in this way, so that six is not an over-generous estimate. Still, six is enough to do most of the lighting on a school stage. These spots usually take bulbs varying from 250 to 400 watts. Six spots will thus have a total maximum wattage of 2,400. At least two 500-watt flood lights should be added, used usually on stands on the floor of the theater. This will add another 1,000 watts to the total. To this should be added an allowance, if possible, of at least 2,000 watts more, for incidental stage lights—such as chandeliers, brackets, lights in fireplaces, etc.—and possibly for one or two larger spotlights from the auditorium. This would make a useful equipment, and one that would not be too expensive for any school planning to do real work in play production.

The total wattage would be as follows:

Footlights	3,400
Borders	2,500
Spots	2,400
Floods	1,000
Additional	2,000
Total	11,300

If the voltage is 110, therefore, the amount of electricity needed for this entire equipment would be 100 amperes. This would be a generous allowance for any school stage—for, as a matter of fact, all of the lights in such an equipment would never be used at once. If possible, however, the school stage might well be supplied with this amount of power. The minimum power necessary is probably about 60 amperes. I have found this ample on many a small stage. The units that may be reduced

are the foot and border lights; and the allowance for additional lighting is not absolutely essential.

SWITCHBOARD

The most important single element is the switchboard if good stage lighting is to be secured. It is in this respect that school stages are most often poorly equipped. In the perfect stage switchboard, every individual light or series of lights is wired with its own individual switch and dimmer, a rheostat controlling the amount of current that flows to every individual light. That is, every spotlight and every flood light, or every receptacle leading to these units, would have its own switch and dimmer, so that it could be cut off independently of every other unit, and so that it could be made any desired degree of brightness up to its full capacity. The same would be true of every series of lights in the foots and borders—all the reds in the foots might be on one switch and dimmer, and so on for every other color. In a large professional theater, even these lights might be broken up into smaller units; for example, the red lights on the left side of the foots might be independent of the red lights on the right side, etc. The total number of dimmers needed for the equipment shown in Figure 9 would, under this ideal arrangement, be not more than twenty. These dimmers, or rheostats, might vary in size from 250 watts for the baby spotlights, to 1,000 watts for each color circuit of the footlights and for large floods. The cost of having such a switchboard made should not exceed $1,000, and the size of the cabinet containing it would probably be about 6′ x 8′ x 2′. Every switchboard for any theater is an individual problem, and must be made to fit the requirements. The switchboard may, therefore, be made to fit into almost any wall space. The traditional place for it is on a small balcony, or *perch*, on the proscenium wall. Here it is out of the way, and the electrician has a fair view of all the lights. A school stage, equipped in this way, would meet every problem likely to be encountered in school play production.

However, there are all sorts of devices for cutting down this element of expense, if it is necessary to do so. One method is to reduce the number of dimmers required—and dimmers are the chief item of expense—by wiring them so that each one has two or three pockets. In this case larger dimmers must be used.

But five or six 1,100-watt dimmers, wired with two pockets each, will be much cheaper than twelve 500-watt dimmers, and will be almost as useful. This scheme is especially valuable if it is combined with some flexible plugging system, such as is illustrated in Figure 10. Here individual light units are not fastened permanently to individual switches and dimmers. But each unit ends in a cable and a plug. The plug fits into a plugging recep-

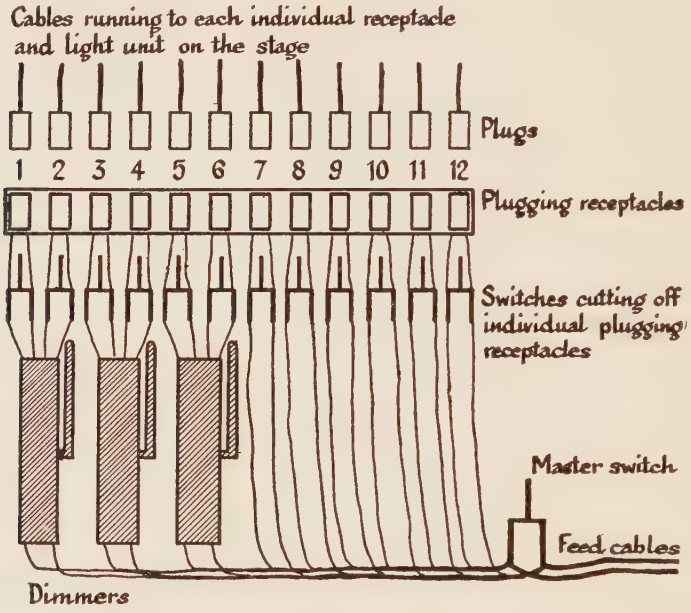
Cables running to each individual receptacle and light unit on the stage
Plugs
1 2 3 4 5 6 7 8 9 10 11 12
Plugging receptacles
Switches cutting off individual plugging receptacles
Master switch
Feed cables
Dimmers

FIG. 10. DIAGRAM OF FLEXIBLE SWITCHBOARD

tacle in the switchboard. In the sketch, twelve plugs and twelve plugging receptacles are shown. The point of this scheme is that all sorts of combinations can be made. Suppose that plug No. 1 is the terminal of the amber footlights, while plug No. 6 leads from an amber spotlight. By putting plug No. 6 into receptacle No. 2, both it and the amber footlights may be controlled by one dimmer. In the same way, two light units so arranged as to cast blue light—say plugs No. 3 and No. 9—may be plugged into receptacles No. 3 and No. 4, and so be controlled together. Thus the amber lights may be brought down and the blue lights up by appropriate changes in the first two dimmers.

Moreover, a switchboard with this arrangement may take care of many more than twelve units. Imagine six more cables and plugs at the top of the diagram. Not more than twelve units can ever be used at once, but in the course of a performance it is entirely possible to use the entire eighteen. For when the unit attached to plug No. 4 is not being used, plug No. 15 may be inserted in receptacle No. 4. A very few large dimmers—three are shown in the sketch—are all that are absolutely necessary to secure excellent light effects, at least better effects than can be secured by any other system. The plugging receptacles not attached to dimmers—receptacles No. 7 to No. 12 in the diagram —need only the feeding wires and cut-off switches which are illustrated.

This scheme has a further advantage in that it may be improved as finances permit. If the original box containing the switchboard is correctly planned, and made large enough, it is a simple matter to add more dimmers as they may be secured. Thus, another dimmer may be added to control receptacles No. 7 and No. 8, and later another to control No. 9 and No. 10, until the board is finally completed so that every light unit is attached to a dimmer—which is always the ideal to be ultimately attained. The only requirement is that a correct scheme be outlined at the beginning. A very small initial outlay may therefore lead in time to a complete light equipment.

When the building is planned originally, perhaps the only thing absolutely required is a panel box wired to contain sufficient power—60 to 100 amperes—in some convenient corner. All the lighting units and fixtures, and the switchboard itself, may be gradually added in the way indicated as dramatics prove their worth and assume their proper place in the educational scheme.

REBUILDING A STAGE

In rebuilding a stage to make it more suitable for play production, the principles are exactly the same as those which guide in the original designing of one. The nearer the stage can be made to conform to the requirements, the more useful it will be. Sometimes the walls of rooms can be taken down so as to give the necessary off-stage space (see page 48). Sometimes an elaborately panelled back wall can be roughly plastered and made into a sky wall or a sky cyclorama (see page 57). Some

device for supporting rigging can usually be put in, such as series of I-beams to hold pulleys (see page 55). The problem is merely to approximate as nearly as possible in the situation such a small, but satisfactory, stage as is shown in Figure 9.

SUMMARY AND CONCLUSIONS

The building of the school theater is primarily a matter of proper planning. In reality, the question of expense need not enter into it at all. Just as it costs no more to arrange the classrooms in a school correctly, so that they are convenient, correctly lighted, of useful size, and so forth, so it costs no more to build a useful auditorium and stage than it does to build one that will be an eternal handicap. The main requirement to be kept in mind as the building is designed is properly arranged space. It cannot be too many times repeated that although the school auditorium is to be used for many things besides play production —for debates, concerts, assemblies, and exercises of all sorts—a stage suitable for all these things may be entirely useless for play production, while a stage that is suitable for play production will be just as suitable for all these other activities. There seems, therefore, to be no reason why all school auditoriums should not be properly equipped. Rigging, lights, switchboard, and all other desirable fixtures can wait; they can be supplied as money is forthcoming, even from the proceeds of the plays produced. But if the stage itself is not correctly planned at the start, no amount of equipment will make it adequate. Changes can be made. Walls can be knocked down, passageways can be added, and space can be commandeered. But nothing is so cheap or so satisfactory as proper planning when the school is built.

Perhaps it is partly the fault of the teachers of play production that many schools are so badly equipped. Too many of them admire ingenuity, and think too little of their art. They delight in relating how they have overcome this or that handicap, as though ingenuity was in itself the end. It is as though an artist would have us admire his picture because he painted with a stick instead of brushes. Or as though the violinist would be praised for playing on an instrument with two broken strings. The real artist is not handicapped by a beautiful instrument. And proper equipment for play production frees ingenuity to produce a better result. It places the emphasis where it should

be placed, on the adequate and moving interpretation of the play itself. This, and not mere mechanical ingenuity, should be the aim that is kept constantly before the students in educational play production.

And it is, of course, the students that the teacher-director must keep constantly in mind. The aim of play production in the school is certainly not to make professional stage workers, any more than the aim of the teacher of composition is to produce professional authors. The aim of play production is to give students the vital and delightful experience that can attend play production when it is properly understood as the most all-inclusive and the most democratic of the arts.

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APPENDIX

CHECKING LIST FOR A SCHOOL THEATER

The following list is designed to be useful to the teacher-director. It suggests the items of information that are necessary for the architect who is planning the school auditorium and stage. With its aid, school authorities should be able to check up blue prints and plans to see in what respects they are suitable or deficient. Again, the list is a form of summary of desirable construction and equipment. A school theater will be found to be useful more or less directly according to the degree with which it conforms to affirmation of the following questions:

1. Auditorium.
   - Will the acoustics be satisfactory?
   - Are the sight lines correct?
   - Will the room make a pleasing æsthetic appeal?
   - Are the hygienic conditions satisfactory in regard to ventilation? toilet facilities? heating?
   - Is the auditorium accessible from the street?
   - Can it be easily darkened for afternoon performances?

2. Size of the Stage.
   - Has it a proscenium wall and arch, not smaller in area than 20′ x 10′, and not larger than 40′ x 15′?
   - Has the proscenium arch a movable teaser and tormentors?
   - Is the back-stage space at least 6 feet wider at each side than the proscenium arch, and in depth at least two-thirds of the width of the opening?
   - Is the back-stage space the maximum size possible, or can it be made larger and more useful by cutting out unnecessary rooms or walls on the stage floor?
   - Can the back-stage space be made more useful by making a larger working side?
   - Is there as much overhead space as possible, with a minimum of 6 to 10 feet over the top of the proscenium arch?

3. Rigging.
   - Is there some sort of "grid," with pulleys and ropes so that scenery can be "flied"?
   - Is the rigging scheme flexible, so that a small equipment can be kept constantly at work?

4. Stage Walls.
   Have the walls been finished properly so that the stage may be used for play production?
   Is there a plaster sky wall, or at least provision for adding one?

5. Stage Floor.
   Is the floor of soft wood, as it should be?
   Is it trapped?
   Is there provision for a ground cloth?

6. Openings in Stage Walls.
   Have the openings in the stage walls been reduced to a minimum?
   Is there a door on each side of the stage?
   Are the openings so placed as to be least in the way?
   Is there one large door to admit scenery and large properties, and is this opening where it will be most accessible from the street?

7. Dressing Rooms.
   Are the dressing rooms so located that they will not be inconvenient in regard to noises, the letting out of light, etc.?
   Are they equipped with mirrors, lights, running water?
   Are there classrooms or laboratories so located that they can be used for dressing rooms, so that no special space need be wasted for this purpose?
   Can any of these classrooms be converted into dressing rooms by the addition of a closet, etc.?

8. Other Accessory Rooms.
   Is there any classroom, laboratory, or space that can be turned into a *green room?*
   Are there any workrooms for the making of scenery and costumes? Are these rooms supplied with running water, gas, lights, etc.?
   If manual training and sewing laboratories are to be used for dramatic work, are they so arranged that material may be carried easily from them to the stage? Are the doors large enough to permit this?
   Is there any space available for the storing of scenery, costumes, and properties?

9. Stage Lighting.
   Has the stage sufficient electrical power—from 60 to 100 amperes?
   Is any equipment that is to be provided left flexible, so that it can be used to capacity?
   If a switchboard is to be installed, is there a correct place for it? Is it so planned that it can be expanded as the work increases?

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